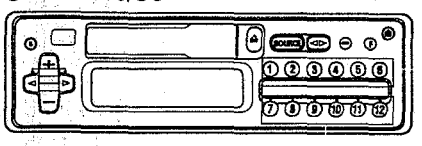
PIONEER®
The Art of Entertainment

Service Manual

● KEH-P770/UC



ORDER NO.
CRT1560

MULTI-CD CONTROL FM/AM TUNER DECK AMPLIFIER

KEH-P770 UC
KEH-P7000 UC
KEH-P7005 ES

NOTE:

- **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.**
- **See the separate manual CX-529(CRT1507) for the cassette mechanism description.**
- **The cassette mechanism employed in this model is one of 1L mechanism series.**

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY.LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL:[03]580-9911

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CHAPTER 1

SAFETY INFORMATION (UC, US MODEL)

CAUTION

This service manual is intended for qualifed service technicaians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperlyb performed repairs can adversely affect the safety and reliability of the prouct and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductiver harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1.SPECIFICATIONS

General
Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 8.0 A
Dimensions (chassis) ..... 178 (W) × 50 (H) × 155 (D) mm
[7 (W) × 2 (H) × 6-1/8 (D) in.]
(nose) ..... 170 (W) × 48 (H) × 10 (D) mm
[6-3/4 (W) × 1-7/8 (H) × 3/8 (D) in.]
Weight ..... 1.4 kg (3.1 lbs.)

Amplifier
Continuous power output is 14 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 30 W × 4 (EIAJ)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance
..... 500 mV/1 kΩ
Tone controls (bass) ..... ±12 dB (100 Hz)
(middle) ..... ±12 dB (1 kHz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)
(Volume: –30 dB)

Tape player
Tape ..... Compact cassette tape (C-30 — C-90)
Tape speed ..... 4.76 cm/sec. (+0.14 cm., -0.05 cm/sec.)
Fast forward/rewind time ..... Approx. 100 sec. for c-60
Wow & flutter ..... 0.09% (WRMS)
Frequency response ..... Metal: 30 — 19,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio
..... Metal: Dolby C NR IN: 73 dB (IHF-A network)
Dolby B NR IN: 67 dB (IHF-A network)
Dolby NR OUT: 61 dB (IHF-A network)

FM tuner
Frequency range ..... 87.9 — 107.9 MHz
Usable sensitivity ..... 11 dBf
..... (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IHF-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)
Selectivity ..... 70 dB (2ACA) (±400 kHz)
Three-signal intermodulation (desire signal level)
..... 50 dBf (two undesire signal level: 110 dBf)

AM tuner
Frequency range ..... 530 — 1,710 kHz
Usable sensitivity ..... 18 μV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±10 kHz)

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

2.OPERATION AND CONNECTION

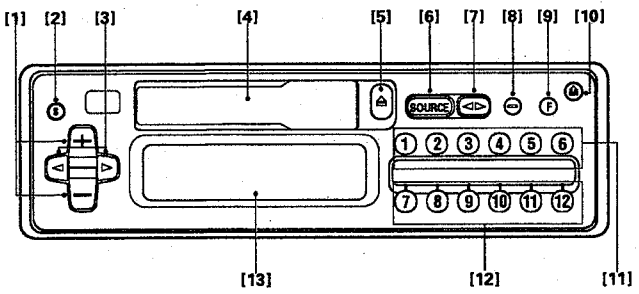


Fig. 1

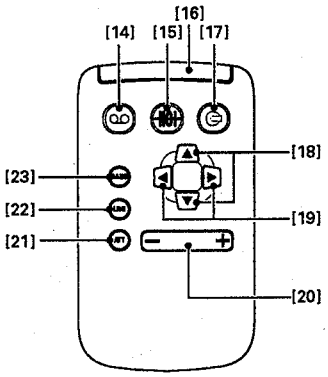


Fig. 2

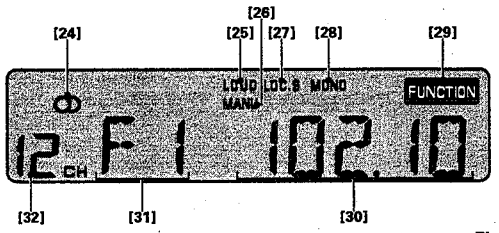


Fig. 3

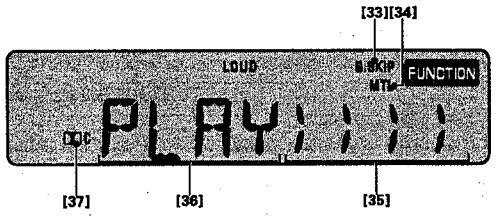


Fig. 4

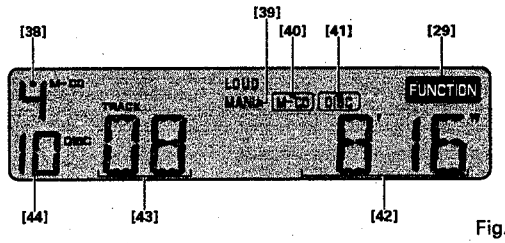


Fig. 5

Using the Radio

Parts Identification

Fig. 1
[3] Tuning/Seek, Manual
[6] Source selector
[7] Band
[9] Function ON/OFF
[11] Preset
[12] Preset (FM1)
[12] ⑧ Local Station/Local seek sensitivity
[12] ⑨ FM stereo/mono
[12] ⑩ Best Stations Memory (BSM)/Preset scan
[13] Display

Fig. 3
[24] FM stereo
[26] Manual
[27] Local Station
[28] FM mono
[29] Function Indicator
[30] Frequency
[31] Band
[32] Preset number

Listening to the Radio

• **Electronic Tuner**
Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocation for North America. Use in other areas will result in improper reception.

1. Press button [6] to switch the radio power on.
2. Press button [7] to select a band.

F1 → F2 → AM
(FM1) (FM2) (AM)

3. Use seek tuning to tune in a frequency. Ensure that "MANU" [26] is not indicated on the display. (If so, turn it off by simultaneously pressing the (◄) and the (►) sides of button [3].) Press either the (◄) side or the (►) side of button [3].
When the (►) side is pressed, the tuner will automatically receive high frequencies.
When the (◄) side is pressed, it will automatically receive low frequencies.
4. **Adjust volume and tone.**
5. **Assign the tuned frequency to one of the buttons in Bank [11] (the buttons in bank [12] are also used in FM1) (Preset memory).**
Press and hold down one of the button in Bank [11] (FM1:[11] and [12]) for at least two seconds. The frequency is assigned to the selected button when the preset number [32] stops flashing on the display. Up to 18 FM stations (12 for FM1 and 6 for FM2), and 6 AM stations can be assigned to the preset memory buttons in Bank [11] (FM1:[11] and [12]).
6. **Once a frequency is assigned to a button in Bank [11] (FM1:[11] and [12]), you just need to press that button to tune it in.**
This also causes the number of the button pressed to appear at position [32] on the display.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.
1. Turn on "MANU" [26] by simultaneously pressing the (◄) side and the (►) side of button [3].

2. Each press of the (►) side of button [3] increases the frequency in 0.2 MHz steps in the FM band, 10 kHz in the AM band. Pressing the (◄) side of button [3] decreases the frequency. Holding down either side of button [3] changes the frequency at high speed.

Function Mode

The button in Bank [12] can be used as the function button. Since 12 stations can be preset for FM1, the function is turned on or off with button [9]. (When the function is on, button [9] lights in yellow, and when it is off, it lights in red.) Since only 6 stations can be preset for FM2 and AM, the function is automatically turned on. When the function is turned on, subsequent operations can be performed.

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has four seek tuning sensitivity levels for FM and two levels for AM to match local conditions.

Changing the Local Seek Sensitivity

1. Use button [7] to select a band.
2. Hold down the button ⑧ in Bank [12] for more than 2 seconds, and the display will show you the current local seek sensitivity for about 5 seconds.
3. While the local seek sensitivity remains on the display, press the (►) side of button [3] to increase the sensitivity level, and the (◄) side to decrease the level as shown below.

FM : LOC-1 ⇄ LOC-2 ⇄ LOC-3 ⇄ LOC-4
AM : LOC-1 ⇄ LOC-2

The LOC-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

Switching between Local and DX

Press button ⑧ in Bank [12] to switch between Local and DX (distant) seek tuning. When "LOC.S" [27] is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

Switching between FM Stereo and Mono

Generally, it is best to allow the "Super Tuner" function to automatically set the optimum listening conditions. When stereo broadcasting is received, "◯" [24] will appear on the display. When there is a large amount of noise, you can press button ⑨ in Bank [12] for clearer mono reception ("MONO" [28] will appear on the display).

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [11] (FM1: [11] and [12]), from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press button [7] and select a band.
2. Holding down button ⑩ in Bank [12] for about 2 seconds will start BSM search. At this time, "BSM" will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons ① through ⑥ (FM1:① through ⑫) in Bank [11] (FM1: [11], [12]).

- At the end of the BSM search, the displayed frequency is that assigned to button ① in Bank [11].
- You can cancel BSM search by pressing button ⑩ in Bank [12] again.
- If there are fewer than 6 (FM1:12) strong stations in the area, some of the buttons in Bank [11] (FM1:[11], [12]) will not be assigned frequencies, so they will retain any frequencies assigned to them previously.
- BSM search may take as long as 30 seconds in areas where there are few strong stations.

Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.

1. Press button ⑩ in Bank [12]. The frequency will appear on the display [30] and the preset number [32] will light up. Each station assigned to the buttons in Bank [11] (FM1: [11], [12]) will be automatically tuned in for about 8 seconds.
2. When you hear a station that you like, press button ⑩ in Bank [12] again to cancel preset scan tuning and remain at that station.

Using the Tape Deck

Parts Identification

Fig. 1
[3] Fast Forward, Rewind/Music search
[4] Cassette door
[5] Eject
[7] Direction change/Release
[11] ③ Blank Skip (B. SKIP)
[11] ④ Dolby B and C NR
[11] ⑤ Repeat (RPT)
[13] Display

Fig. 4
[33] Blank Skip (B. SKIP)
[34] Metal
[35] Tape running direction indicator
[36] Play indicator
[37] Dolby B and C NR

About Cassette Tapes

- Do not use tapes longer than C-90-type (90 min.) cassettes. Longer tapes can interfere with tape transport.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport. (Fig. 6)

Fig. 6

- Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.

Cleaning the Head

If the playback head becomes dirty, sound quality will suffer. Periodically (once or twice a month) clean the head with a cotton swab soaked with alcohol. (Fig. 7)

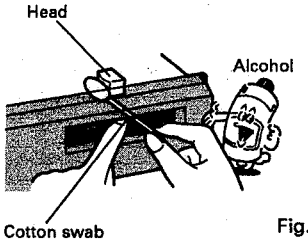


Fig. 7

Listening to a Tape

1. Insert the cassette tape into the slot [4], and power will be turned on and the tape begin being played back.

At this time, the tape running direction indicator [35] will light up.

2. Adjust volume and tone.

3. To eject the cassette tape, press the button [5].

- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.

Changing Program

When button [7] is pressed, the tape switches from side A to side B (or from side B to side A). (If the button is pressed during fast forwarding or rewinding, the current side is played.)

Dolby B and C NR

Press the button ④ in Bank [11] to listen to a cassette recorded using the Dolby NR system. Each press of the button ④ in Bank [11] shifts the Dolby NR mode as follows: Dolby B NR ("DD" [37] appears) → Dolby C NR ("DDC" [37] appears) → Dolby NR off.

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

Using Fast Forward and Rewind

1. To fast forward tape, press the (►) side of the button [3].
   (Display shows "FF".)
   To rewind tape, press the (◄) side.
   (Display shows "REW".)

2.To release the fast forward or rewind function, press the button [7].

Using Music Search

1.To repeat the current selection (A), press the (◄) side of the button [3] two consecutive times.
(Display shows "R-MS".)
To hear the following piece of music (B) rather than continue the current selection, press the (►) side of the button [3] two consecutive times.
(Display shows "F-MS".)
Pressing the button [3] three consecutive times makes the normal sequence of playing resume.
2.To release the music search function, press the button [7].

The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded blank portion between selection is less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations are longer than 4 seconds → the unit reads these as blanks between selections.
- Portions are recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.

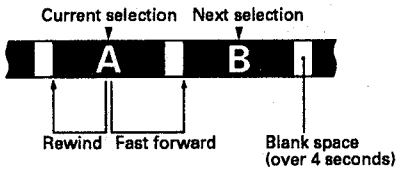


Fig. 8

Auto Tape Selector

When a cassette tape is inserted, the automatic tape selector determines the tape type, and switches between 70 µs and 120 µs equalization. When it is a metal or chrome tape, "MTL" [34] comes on. When it is a normal tape, nothing comes on.

Using the blank skip function

Automatically carriers out fast forward to the start of the next selection when there is a blank area of 12 seconds or more between selections.

1.Press button ③ in Bank [11] until "B. SKIP" [33] appears.
2.To release the blank skip function, press button ③ in Bank [11] again.

Using the Music Repeat Function

Lets you listen to the same selection repeatedly.

1.Press button ⑤ in Bank [11] when you are listening to the track to be repeated until "RPT" appears on display [36].
2.To cancel the music repeat function, press button ⑤ in Bank [11] again or press button [7].

Using the Remote Control

Loading Batteries

1.Remove the battery compartment cover from the remote controller unit.
2.Load two batteries, whose type is UM-4, AAA or IEC R03 1.5V, as applicable, that come with the unit into the remote controller unit, ensuring that their polarity (+/–) is correct.
3.Replace the battery compartment cover.

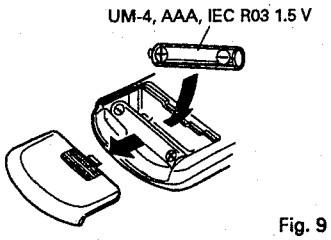


Fig. 9

Precautions When Loading Batteries

Note the following precautions when loading batteries into the remote controller unit to avoid damage due to battery fluid leakage.

- Always check carefully that you are loading batteries with the (+) and (–) poles facing in the proper directions.
- Never mix old and new batteries. Always replace batteries with two new ones.
- Some batteries may appear to be identical but have different voltage ratings. Never mix battery types.
- Some batteries can be recharged and some cannot. Be sure to carefully read the label for the batteries you use.
- To avoid damage to the remote controller caused by battery leakage, remove the batteries from the remote controller if you do not plan to use it for more than one month. If you find that fluid has leaked, thoroughly wipe out the battery compartment and load a set of new batteries.

Precautions

- Keep the remote controller unit in an area not exposed to long periods of direct sunlight.
- The remote controller unit may not operate properly if the transmitter of the remote controller unit is pointed towards the floor or the seat of the vehicle.
- Since the transmitter employs and infrared system, it may not operate properly while car stereo unit is exposed to direct sunlight. In such a case, block the sunlight from the sensor and then perform the desired operation.
- If the remote controller fails to operate unless it is brought close to the unit, it may indicate that battery power is low. Replace the batteries in the remote controller.

Parts Identification

Fig. 2
[14] Tape
If this button is pressed while there is a cassette tape inserted in the equipment, the unit will switch to tape-playing. Press it again to turn the unit OFF.
[15] Tuner
The tuner is selected. Pressing again turns off the power.
[16] Transmitter
[17] CD
Unit goes to CD play. Press again to turn OFF.

- This function only works when this unit is connected to a separately sold multi-Play CD player (CDX-P1200, CDX-P600).

[20] Volume
Press the (+) side to increase volume and the (–) side to decrease volume.
[21] Attenuator
Press to reduce the volume to 1/10 of its current setting (The "ATT" display blinks.). Pressing again returns the volume to its original level.

- This function is available using the remote controller unit only.

[22] Learn Button
Takes on the same function as the button recorded with the learn function. Refer to the section "Learning Function" for details.

Operating Radio

[23] Band
Band changes.
[18] Preset Channel
Press to tune the frequencies assigned to the preset button memory. Pressing the (▲) side tunes in the next high preset button number, while (▼) tunes in the next lower preset button number. The preset number changes at high speed when you hold either side of this button down.
[19] Seek Tuning
Press either the (◄) side or the (►) side. When the (►) side is pressed, the tuner will automatically receive high frequencies. When the (◄) side is pressed, it will automatically receive low frequencies.

Operating Tape

[23] Program
Press this button to change the side of tape from A to B or vice versa.
[19] Fast Forward/Rewind
Press the (►) side for fast forward and the (◄) to rewind the tape. Press this button twice to perform the music search operation, and a third time to return to normal playback.

Operating the CD Player

- This function only works when this unit is connected to a separately sold multi-play CD player (CDX-P1200, CDX-P600).

[18] Disc Number Search
Used to specify the number a disc loaded in the magazine. Press the (▲) side to increase the disc number on the display, and the (▼) side to reduce the disc number. Holding

down either side of this button changes the disc number at high speed.

[19] Track Number Search

Press to search for a selection (track number) on the current disc. Press the (►) side to increase the track number on the display, and the (◄) side to reduce the track number. Holding down either side of this button changes the track number at high speed.

Disc Title Input (Entering Titles)

You can enter a title for the disc in the multi-play CD player. The title stored for the disc can be displayed.

Buttons [18] and [19] on the remote controller have the same funcitons as buttons [1] and [3] on the main unit, respectively.

(See the section "Disc Title Input" on page 25)

Learning Function

Fig. 1

[9] Learn changeover button

Fig. 2

[22] Learn Button

Records one button from the main unit on the remote control's learn button. This can be convenient when a button which is used often is recorded.

1. Holding down button [9] for at least 2 seconds displays "LEARN" for about 8 seconds.
2. Press the button on the main unit that you want to use on the remote control.
3. Press the learn button [22] on the remote controller unit. The main unit button recorded can now be used from the remote control.

- Store the button memory while "LEARN" is displayed. Once that "LEARN" display goes out, nothing can be stored into the button memory.

Using the Clock Display

Parts Identification

Fig. 1

[8] Clock
[11] ① Hour adjustment
[11] ② Minute adjustment
[11] ③ Clock reset

Displaying the Time

The clock is displayed when button [8] is pressed. Press button [8] again to switch off the clock display.

- The clock display can be used only when the main unit is in operation.
- When the clock is being displayed, pressing any other button will end the clock display. The clock will be displayed again about 25 seconds after the last button is pressed.

Adjusting the Time

Adjusting Hour

While holding down button [8], press button ① in Bank [11] to adjust the hour setting. Each time button ① in Bank [11] is pressed, the hour advances by one hour. Holding down button ① in Bank [11] advances the hour at high speed.

Adjusting the Minutes

While holding down button [8], press button ② in Bank [11] to adjust the minute setting. Each time button ② in Bank [11] is pressed, the minute advances by one minute. Holding down button ② in Bank [11] advances the minute at high speed.

Adjust the clock with the "immediate clock adjustment"

Hold down button [8] and press button ③ in Bank [11]. The time becomes "○○:00".

- If the "minute" indication is 00 to 29, it is discarded, and the clock starts. (Example: If the time is "10:18", it becomes "10:00".)
- If the "minute" indication is 30 to 59, it is rounded up, and the clock starts. (Example: If the time is "10:36", it becomes "11:00.")

Playing Compact Discs

Precautions When Using the Multi-Play CD Control

- If the IPS-BUS extension adapter is used, up to 4 multi play CD players can be connected. When two or more CD players are connected, their priorities must be specified for the Multi-play CD players. See the Multi-play CD players instructions and set the address switches correctly.
- Use this unit with optional multi-play CD players (CDX-P1200 or CDX-P600).
- If two or more multi-play CD players are connected to the unit, you can select the CD player to be played. Each press of button [7] switches between the CD players and magazine number [38] on the display.

Parts Identification

Fig. 1

[3] Track number search/Fast Forward, Reverse
[6] Source selector
[7] Multi-play CD player select
[9] Function ON/OFF
[11] Disc number search
[12] Disc number search
[12] ⑦ Display selector/Edit
[12] ⑧ ITS (Instant Track Selection)/program clear
[12] ⑨ Play mode switching/ITS play
[12] ⑩ Scan /Random play
[12] ⑪ Title list
[12] ⑫ Pause
[13] Display

Fig. 5

[29] Function indicator
[38] Magazine number
[39] Manual
[40] Magazine repeat mode
[41] Disc repeat mode
[42] Elapsed play time display
[43] Track number
[44] Disc number

Using the Multi-Play CD Player

1. Press button [6] to change the display to the multi-play CD player mode and to begin disc play.

Each press of button [6] changes the mode as follows:

Tape → Radio → Multi-play CD player → OFF

2. Use the Disc Number Search function to select a disc.

Select the desired disc by pressing one of the button in Bank [11], [12]. The number of the disc selected appears at position [44] on the display.

- If the number at position [44] on the display does not change when you press a button in Bank [11], [12], it means that there is no disc loaded in that tray.

3. Adjust volume and tone.

4. To stop disc play, press button [6].

At another press, the normal play resumes from about where it stopped.

Note:

- It takes about 30 seconds from setting the magazine in the multi-play CD player till the start of CD playback. ("READY" appears on the display.) This does not indicate a problem; it is just for verifying

there a disc in the magazine.
- When the multi-play CD player is not working correctly, an error message appears on the display (Ex: "ERROR-80"). Identify the error from the multi-play CD player owner's manual.
- After you press a button in Bank [11], [12], it may take some time before play begins due to the time necessary to load and set the disc in the mechanism.

Track Number Search

The desired track on the disc currently being played can be selected by track (or song) number.
Make sure "MANU" [39] is not displayed on the display. If it is, press the (◄) and (►) sides of button [3] at the same time to turn it off.
Press the (►) side of button [3] to increase the number at Position [43], or the (◄) side to decrease the number. Holding either side of button [3] down changes the track number at high speed.

Using Fast Forward and Reverse

1. Press the (◄) and (►) sides of button [3] at the same time. "MANU" [39] appears on the display.
2. Press the (►) side of button [3] for fast forward, and the (◄) side for reverse.
- Sound is output during fast forward and reverse operations.

Function Mode

If the 12-disc magazine CD player CDX-P1200 is combined with this unit, button [12] acts as the disc number search button. Press button [9] to switch between the function mode and disc number search button. (When the function mode is on, button [9] lights in yellow, and when it is off, it lights in red.)
When the function is turned on, subsequent operations can be performed.

Repeat

You can select one of the play modes (repeat modes) listed below.

Play mode (repeat mode)	Operation
One-Track Repeat	Play the current track repeatedly. • When you perform track number search or fast forward or rewind, the mode changes to disc repeat mode. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Disc Repeat	Play the same disc repeatedly. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Magazine Repeat	Play all discs loaded in the magazine in the multi-play CD player repeatedly. All discs in the magazine are played repeatedly from the first disc.
ALL Repeat	The mode changes to this mode when 2 or more multi-play CD players are connected. Multi-play CD players 1 to 4 are played.

Each press of button ⑨ in Bank [12] causes the mode to change as follows:
One-Track Repeat ("RPT" appears on the display [42]) → Disc Repeat ("DISC" [41] appears) → Magazine Repeat ("M-CD" [40] appears) → ALL Repeat

Random Play

The microcomputer of the multi-play CD player selects plays tracks on discs in random order. Random play is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played at random
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	All tracks on the discs in the magazine being played.
ALL Repeat*	All tracks on all discs in multi-play CD players 1 to 4.

* When 2 or more multi-play CD players are connected.

1. Select the desired random play mode (repeat mode). (See page 1-7.)
2. Hold down button ⑩ in Bank [12] for more than 2 seconds. ("RDM" appears on the display [42].) To cancel random play, hold down button ⑩ in Bank [12] for more than 2 seconds again. ("RDM" disappears.)
- Since selections are played in random order, the same selection may be played twice in succession.

Using Scan

The first parts of each track are played in succession for about 10 seconds. This function is useful to search for the track or disc you want to listen to. Scan is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be scanned and played
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	The first tracks of all the discs in the magazine being played.
ALL Repeat*	First tracks of all discs loaded in multi-play CD players 1 to 4.

* When 2 or more multi-play CD players are connected.

1. Select the desired random play mode (repeat mode). (See page 1-7.)
2. Press button ⑩ in Bank [12]. ("SCAN" appears on the display [42].) The first parts of all tracks are played in succession for about 10 seconds.
3. When you hear the track you want, press button ⑩ in Bank [12] again to cancel Scan. ("SCAN" disappears.) The track (disc) being played is when played to the end.
- The previous function automatically resumes when a piece of music with which Scan began returns.

ITS (Instant Track Selection)

This function lets you program and play the tracks you want. You can listen to just your favorite tracks.

- The ADPS function* of the multi-play CD player lets you program up to 100 discs. (Up to 100 discs can be programmed including disc title inputs (see page 1-8).)
  * ADPS: Automatic Disc Program Selection
- Up to 99 tracks can be programmed for a single disc.
- When the number of discs exceeds 100, discs not being played (Information not being renewed) in memory is overwritten by the newest.
- Tracks are programmed for each disc. Programmed tracks are not erased after the disc is changed.

Programming

1. Play the track you want to program.
2. Press button ⑧ in Bank [12] to program the track.
   ("ITS" appears on the display [42] for 3 seconds.)
- Program tracks while ITS play is not in progress. It is possible during scan play or random play.

ITS Play

Track stored only in memory are played in order. Tracks are played according to ITS play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played by ITS
One-Track Repeat	Programmed tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	Programmed tracks on the disc being played.
Magazine Repeat	Programmed tracks on the discs in the magazine being played. • If the disc being played contains no programmed tracks, the next disc containing programmed tracks is played.
ALL Repeat*	Programmed tracks on all discs in all magazines in multi-play CD players 1 to 4. • If the disc (multi-play CD) being played contains no programmed tracks, the next disc (multi-play CD) containing programmed tracks is played.

* When 2 or more multi-play CD players are connected.

1. Select the desired ITS play mode (repeat mode). (See page 1-7.)
2. Hold down button ⑨ in Bank [12] for more than 2 seconds. ("ITS.P" appears on the display [42].) To cancel ITS play, hold down button ⑨ in Bank [12] for more than 2 seconds again. ("ITS.P" disappears.)

- When you play a disc that has no tracks programmed, "EMPTY" will appear on the display [42] for about 3 seconds, indicating that ITS play is not possible.
- You can perform scan play or random play during ITS play. In this case, scan play or random play applies to all the tracks stored in memory. (If the play mode is the magazine repaet mode or all repeat mode, scan play applies to all the tracks of the discs in the magazine stored in memory.)
- During ITS play, multi-play CD players containing discs with programmed tracks are switched, and disc and track number search is performed on programmed tracks.

Erasing the ITS Program

You can erase one or all selections of the program for the disc being played by ITS.

To erase a single selection:

1. Start ITS play. (See page 1-8.)
2. Play the track you wish to erase by using disc number search or track number search.
3. Hold down button ⑧ in Bank [12] for more than 2 seconds. ("CLEAR" appears on the display [42] for about 3 seconds.)

To erase the disc program:

1. Start normal play.
2. Play the disc you wish to erase by using disc number search.
3. Hold down button ⑧ in Bank [12] for more than 2 seconds to erase the program. ("CLEAR" appears on the display [42] for about 3 seconds.)

Pausing

1. Press button ⑫ in Bank [12] to pause during disc playback ("PAUSE" appears on display [42]).
2. Press button ⑫ in Bank [12] again to release pause.

- You can select a track using the track number search during pause. ("PAUSE" is off while a track is being searched.) When the track search ends, the found track is paused at its betinning.

Disc Title Input

You can enter a title for the disc in the multi-play CD player. The title stored for the disc can be displayed.

- The ADPS function* of the multi-play CD player lets you enter titles for up to 100 discs. (Up to 100 discs, including ITS, can be programmed (see page 1-8).)
  *ADPS: Automatic Disc Program Selection
- A disc title can consist of up 8 characters for a single disc.
- When the number of discs exceeds 100, discs not being played (information not being renewed) in memory is overwritten by the newest.
- One title is stored for each disc. The title stored for a disc is not erased after the disc is changed.

Entering Titles

1. Select the disc for which you want to enter a title.
2. Hold down button ⑦ in Bank [12] for more than 2 seconds to select title input mode.
3. Press the (◄) or (►) side of button [3] to select the input position. The input position moves continuously when you hold down either side of the button.

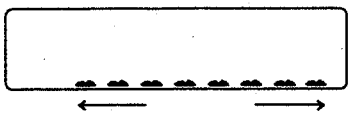


Fig. 10

4. Select characters using the (+) or (–) side of button [1]. When you hold down either side of the button, the character changes continuously. Each press of the (+) side changes the character from "A → B → C...", while each press of the (–) side changes the character from "C → B → A". To enter a space, press the space sign (_).
5. Enter all characters by repeating steps 3 and 4.
   Press button ⑦ in Bank [12] to store them in memory.
   The title will appear on the display.

Disc Title List

You can list all discs loaded in the magazine being played. This function is convenient for checking discs in the magazine being played.
Each press of button ⑪ in Bank [12] displays the titles of the discs in magazine being played in ascending order of disc number.
The disc title is displayed for about 8 seconds, then the normal operation display returns.

- Nothing is displayed for discs having no titles.
- Trays with no discs are skipped.

Select the disc to be played from the disc list display.

1. Press button ⑪ in Bank [12] to display the disc title.
2. When the title of the disc you want to listen to is displayed, press button ⑦ in Bank [12]. That disc is played.

Display Switching

Each press of button ⑦ in Bank [12] switches the display [42] between the elapsed play time and disc title.
When you press button [7] while the disc title is being displayed, the normal operation display will appear for 8 seconds.

Connection Diagram

(Fig. 11)

1. Antenna jack
2. Rear out
3. Front out
4. White
5. Red
6. Connecting cords with RCA pin plugs (sold separately)
7. Power amp (sold separately)
8. Blue
9. Multi-play CD player etc. (sold separately)
10. IP-BUS input (blue)
11. Blue
    To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300mA 12VDC).
12. Black (ground)
    To vehicle (metal) body.
13. Red
    To electric terminal controlled by ignition switch (12VDC) ON/OFF.
14. Orange
    To terminal always supplied with power regardless of ignition switch position.
15. Yellow/Black
    Cellular mute
    If you use a cellular telephone, connect IC via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
16. Fuse resister
17. Fuse holder
18. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
19. Use this for connections when you have the separately available amplifier.
20. Left speaker
21. Right speaker
22. Front
23. Front or Rear
24. Rear
25. Green
26. Gray
27. Green/black
28. Gray/black
29. Green/red
30. Gray/red
31. Black/green
32. Black/gray

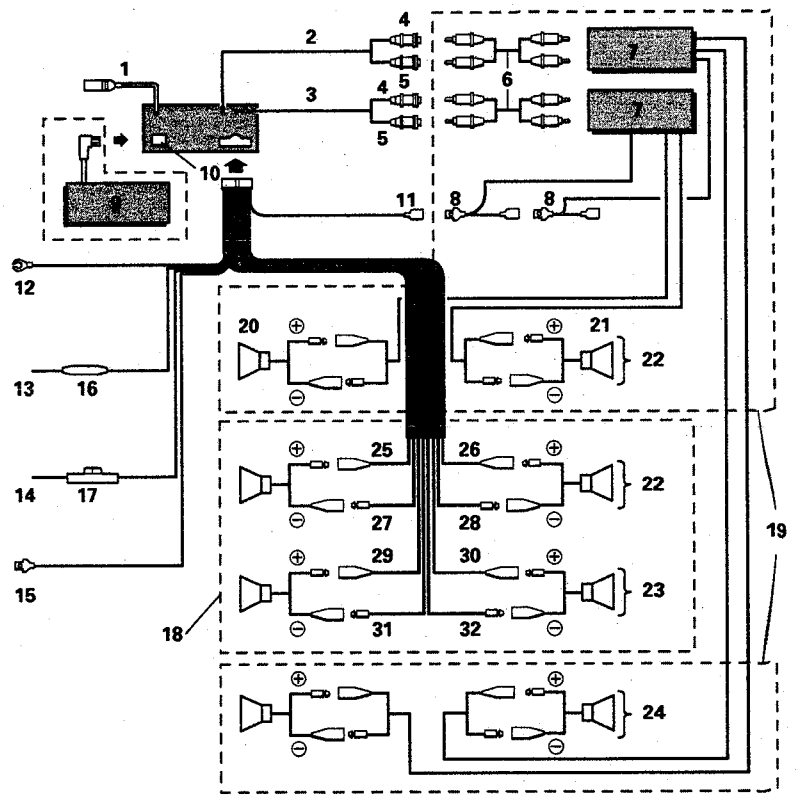


Fig. 11

3.ADJUSTMENT

●Test Mode

Test mode is mainly used adjustment of IP BUS type CD multi players.

- Switching to test mode
  While pressing the 4, 6 keys together, switch the back up and ACC ON.
- Canceling test mode
  Switch the CD multi-player and back up and ACC OFF.

a) CD multi-player

Key	Function
BAND/CLR	Power ON/OFF
FF	FWD-KICK
REV	REV-KICK
F1	Tracking close
F2	Tracking open
F3	Focus close
F4	Focus open
F5	Jump OFF
F6	Carriage/Tracking

- SINGLE/10TRK/32TRK will continue to operate even after the key is released.Tracking closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is off.

●Flow Chart

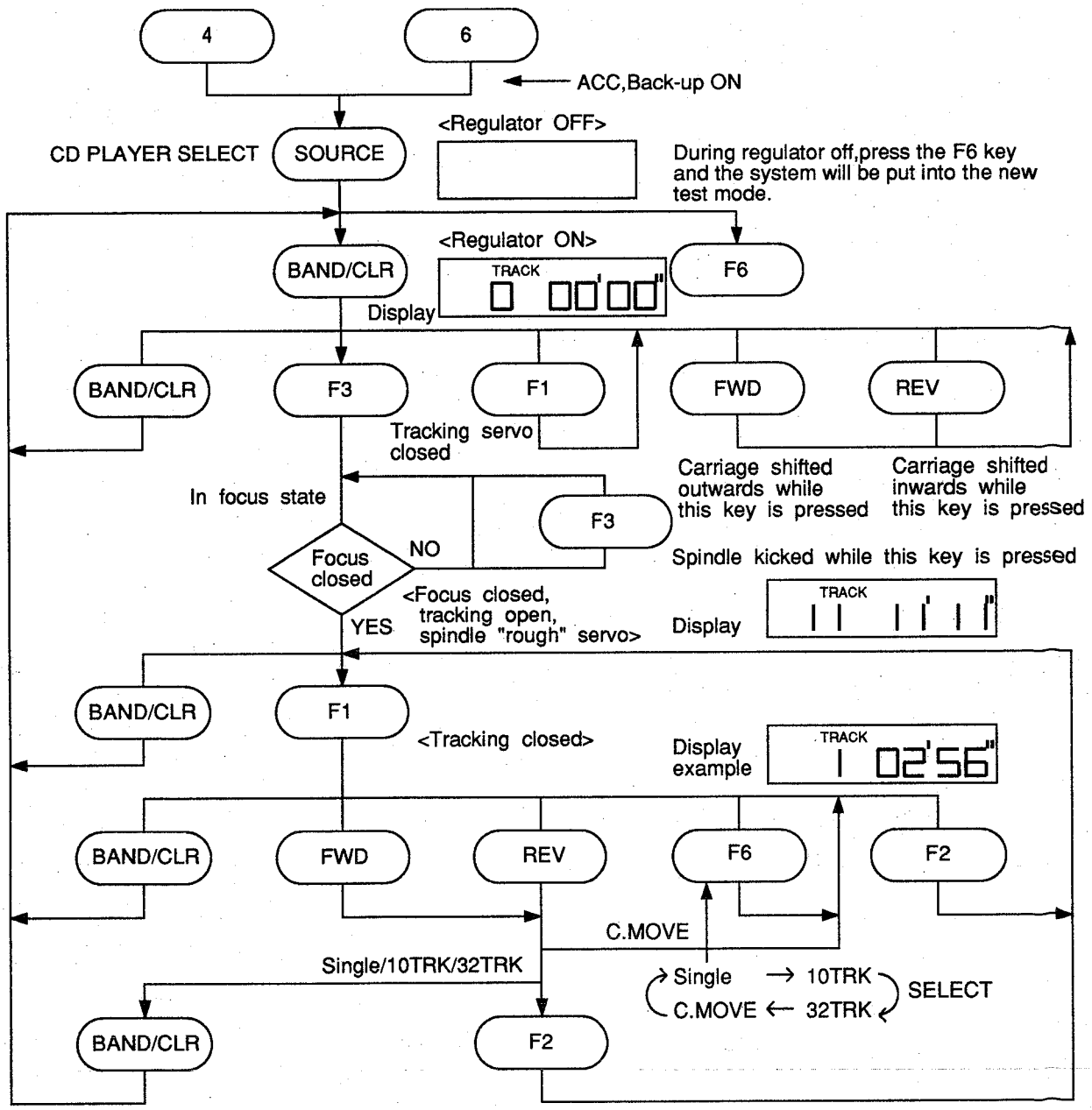


Fig.12

● Error Numbers And New Test Mode

● Indicating An Error Number

If the CD should fail to operate in CD multi player or if an error has taken place during the operation and resulted in an error, the player will enter into the error mode.And the cause of such error is numerically indicated.
This is armed at assisting an analysis or repair.

(1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitter by the use of MIN and SEC. Identical date are transmitted with MIN and SEC.
- Examples of Head Unit Display ERROR XX

(2) Number of Error Codes

100 codes, ranging from 00 thought 99.

(3) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Unmovable to and from the inner circumference →Home switch failed and/or carriage improper moved
11	ELECTRIC	Focus failure	Focus failed →Disk scarred or stained on the back or vibrating hard
12	ELECTRIC	SETUP failure	Spindle failed to lock or subcode extraordinary →Spindle defective, disk other than audio and ROM
14	ELECTRIC	Blank Disk	Unrecorded CD-R The disc has been in inserted upside down
30	ELECTRIC	Search time out	Target address failed to reach →Carriage/tracking improperly and/or disk scarred
A0	SYSTEM/ MECHANISM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal
50	MECHANISM	An error upon ejection	MAG SW release time has time out Elevation time out when eject
60	MECHANISM	An error while putting in and out the tray	Tray in/out time has time out Tray is caught when put in
70	MECHANISM	An error upon elevation	Elevation time has time out
80	MECHANISM	An error with an empty magazine inserted	No disk is available

● New Test Mode(aging operation and setup analysis)

The CD multi player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number)
During the setup,the CD software operation status (internal RAM and C-point)is displayed.
The software on the head unit side does not involve any special problem but runs normally.

(1) How to Put in the NEW TEST Mode

See the test mode flow chart Page1-11.

(2) Relations of keys between TEST and NEW TEST Modes

IP-BUS Commands	Keys	Test Mode		New Test Mode	
		Regulator OFF	Regulator ON	PLAY in progress	Error, Protection
15 00	BAND/ CLR	Power ON	Power OFF	—	Cause of error selected
15 01	FF	—	FWD-KICK	TRACK UP/FF	—
15 02	REV	—	REV-KICK	TRACK DOWN /REV	—
15 03	F·1	—	TRACKING CLOSE	SCAN	—
15 04	F·2	—	TRACKING OPEN	MODE CHANGE	—
15 05	F·3	—	FOCUS CLOSE	—	—
15 06	F·4 —	—	FOCUS OPEN	—	—
15 07	F·5 —	—	JUMP OFF	—	—
15 08	F·6	To New Test Mode	Jump-Mode Selected	AUTO/MANU	—

Operations,such as EJECT, CD ON/OFF, etc.are to be performed normally

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause/Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Subcode fails to read
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated

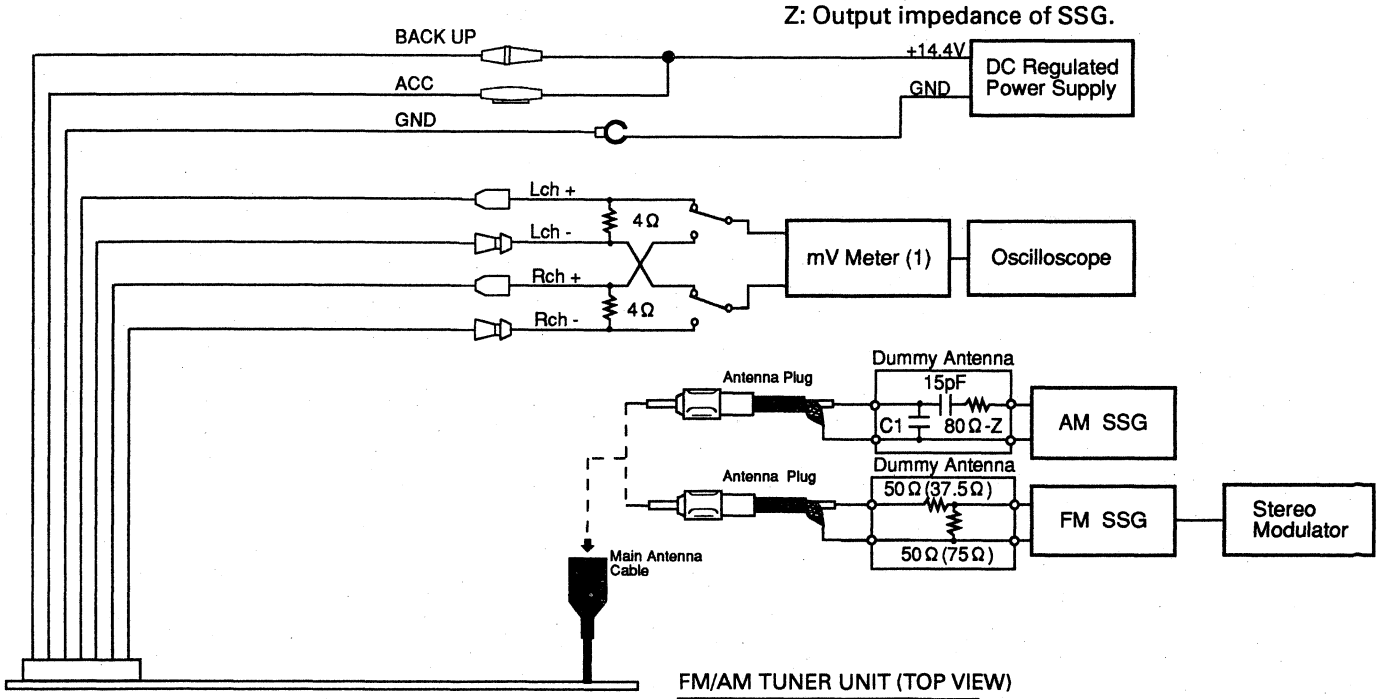
Scar, Stain, Vibration, Servo defect, etc...

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving on the internal circumference	10-second time out
03	Carriage moving on the external circumference	10-second time out
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closing	Failure to focus closing
14	Spindle kicked and focus checked	Out of focus
15	Tracking closed and focus checked	Out of focus
17	Carriage closed and focus checked	Out of focus
18	Lock waiting Subcode waiting	Failure to lock,subcode failed to read Out of focus
19	End	None

●Connection Diagram

NOTICE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.



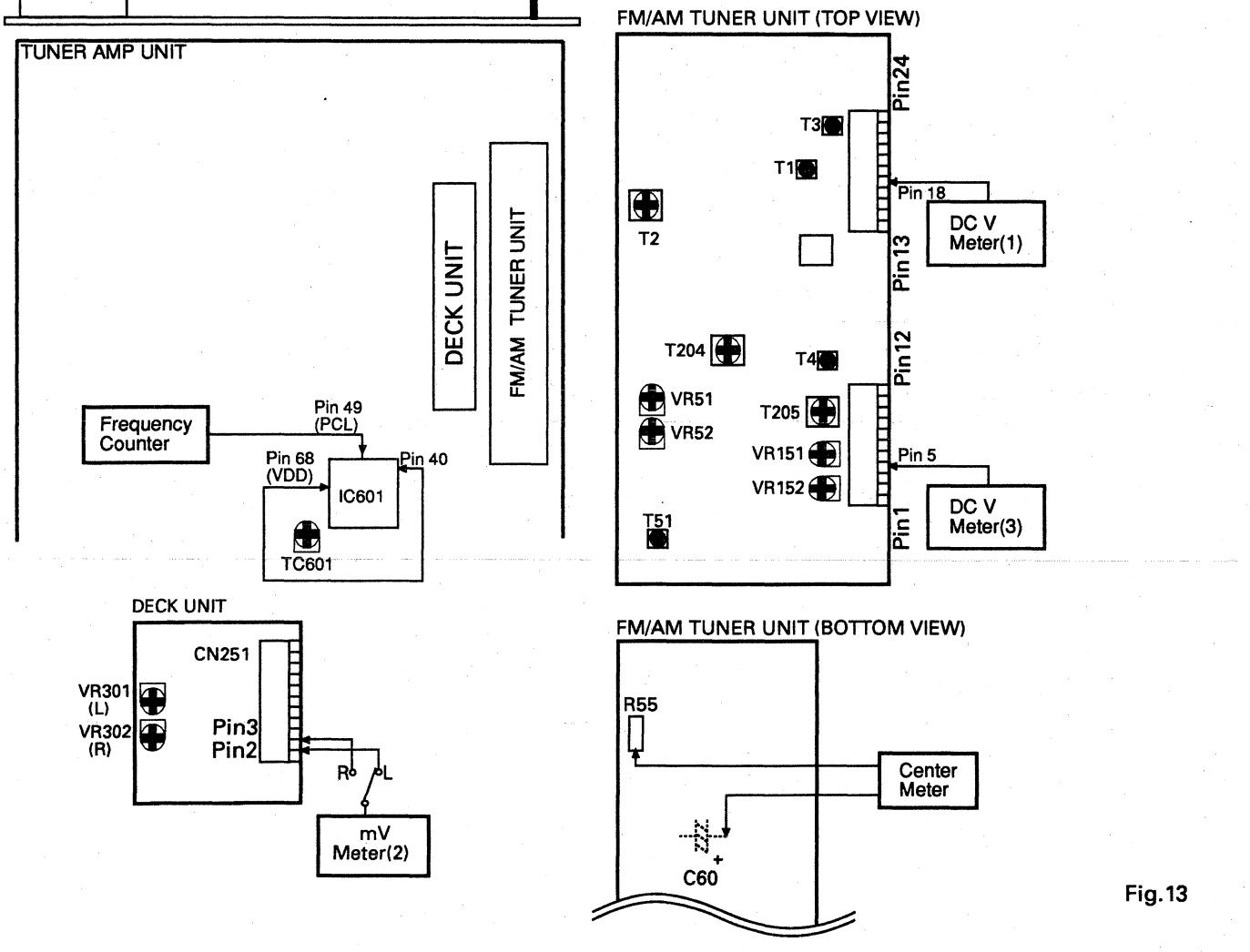


Fig.13

AM ADJUSTMENT

(999) : ES Model tuning steps at 9 kHz

	No.	AM SSG(400Hz,30%)		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dB μV)			
IF	1	1,000 (999)	20	1,000	T204,T205,	mV Meter(1) : Maximum

FM ADJUSTMENT

(108) : ES Model

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	107.9 M (108)	65	107.9	T4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter:0
ANT,RF	1	98.1 M	10	98.1	T1,T3	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (AUTO ON)
Soft Mute	1	98.1 M	65	98.1		mV Meter(1) : A (AUTO ON)
	2	98.1 M	15	98.1	VR52	mV Meter(1) : A-3dB
MPX	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(3) : Approx. 5V

DOLBY NR ADJUSTMENT(KEH-P770/UC,KEH-P7000/UC)

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : -8.24dBs(300mV)+1.5dB -5dB (DOLBY NR Switch : OFF)

DOLBY NR ADJUSTMENT(KEH-P7005/ES)

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : -8.24dBs(300mV)±1dB (DOLBY NR Switch : OFF)

CLOCK ADJUSTMENT

No.	Adjustment Point	Adjustment Method Point
1		Pin40 of IC701 connect to pin68(VDD)
2	TC701	Frequency Counter : 1.048576MHz±2Hz

4.DISASSEMBLY

●Removing the Case (not shown)

1.Remove the screw and, then remove the case.

●Removing the Cassette Mechanism Module (not shown)

1.Remove the four screws.

2.Disconnect the connector of deck unit.

3.Remove the cassette mechanism module.

●Removing the Detach Grille Assy (Fig.14)

1.Disconnect the connector.

2.Disconnect the two stoppers indicated by arrows.

3.Remove the detach grille assy.

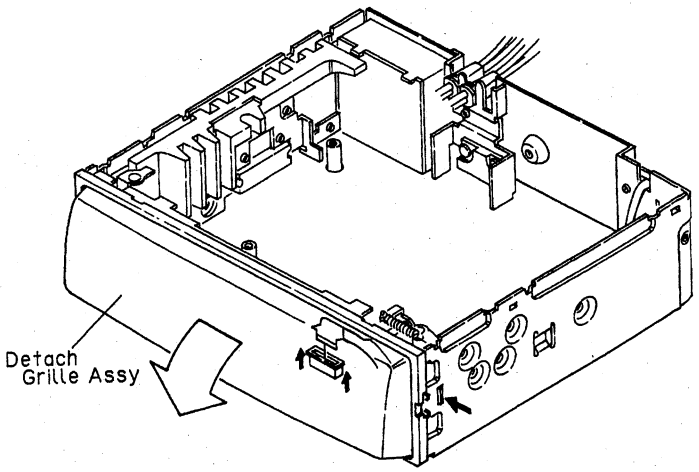


Fig.14

●Removing the Chassis Unit (Fig.15)

1.Remove the screw A , three screws B and four screws C.

2.Unbend the tabs at three locations indicated by arrows until straight.

3.Remove the chassis unit.

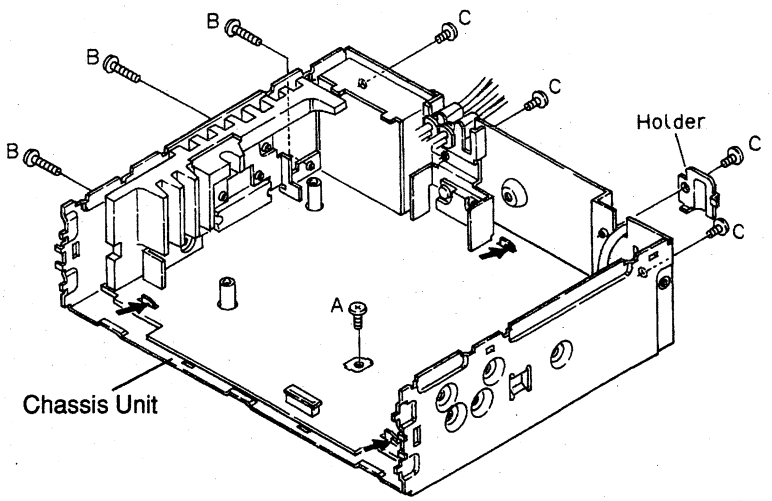
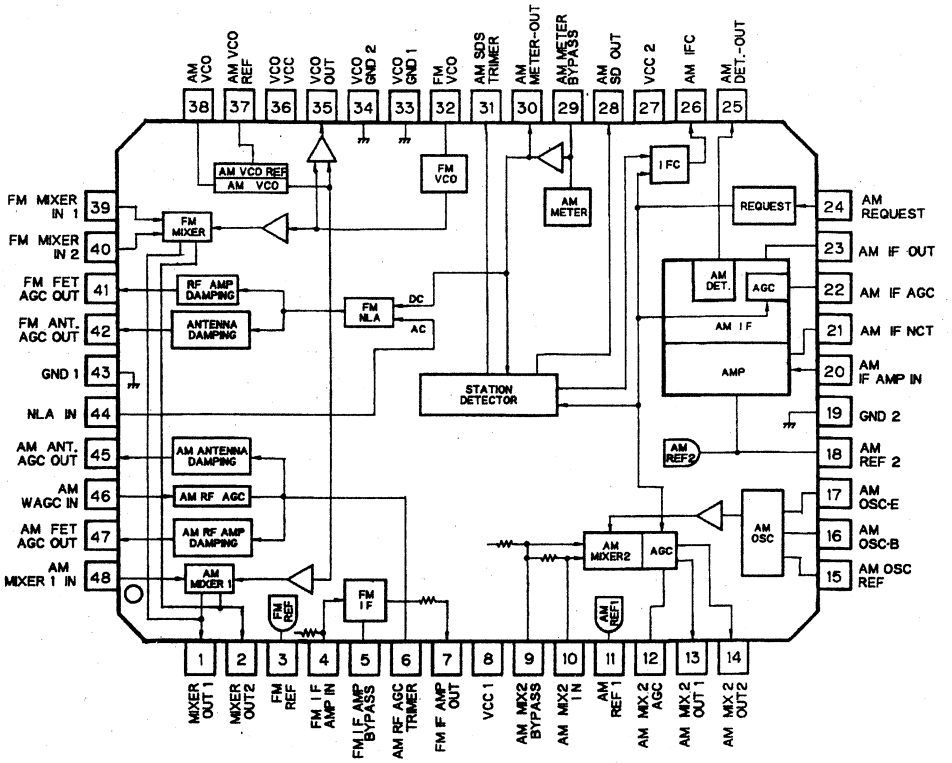


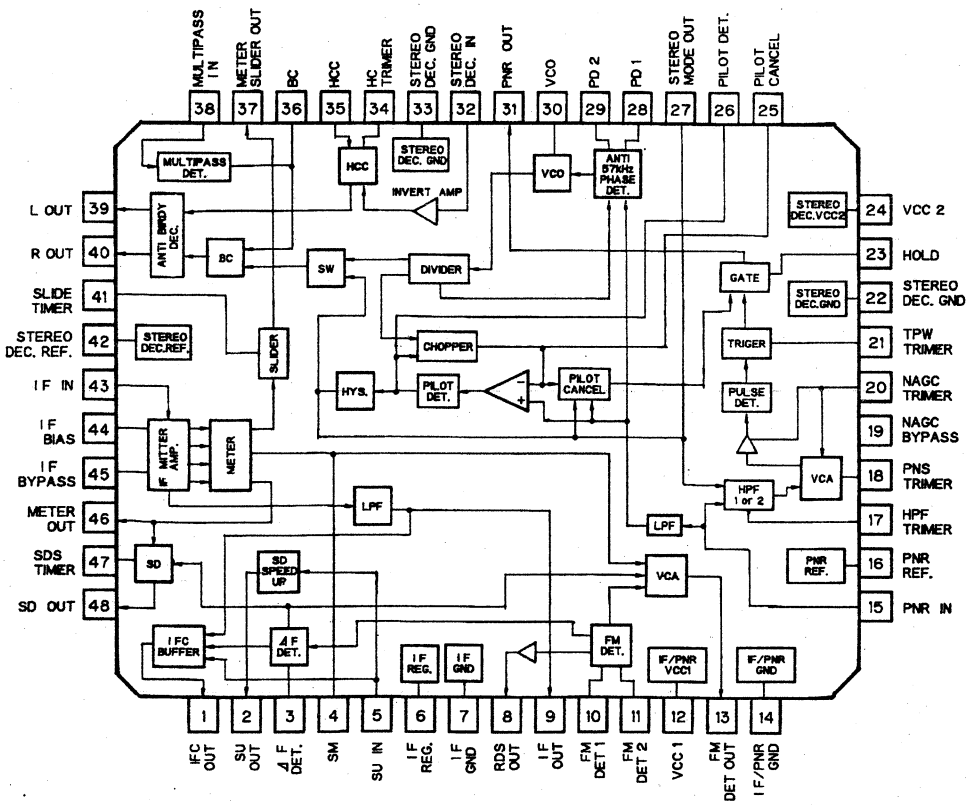
Fig.15

● ICs

PA2021A



PA2022A



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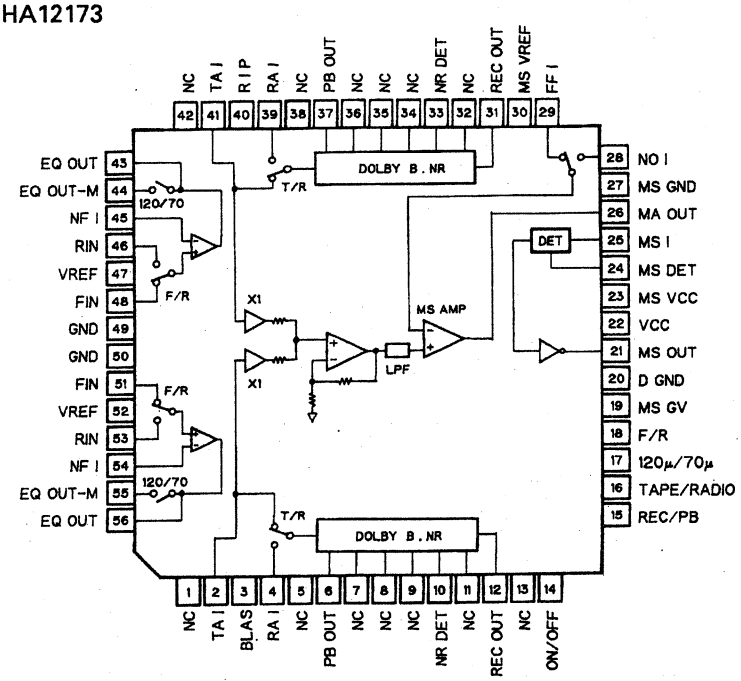

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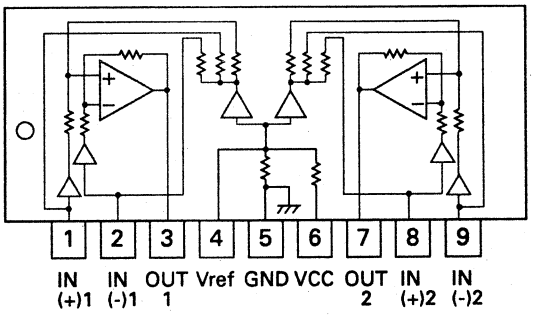

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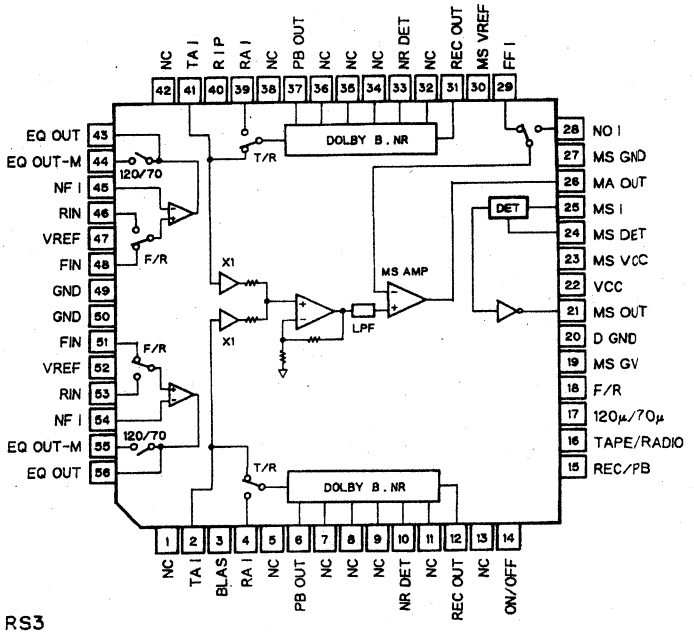
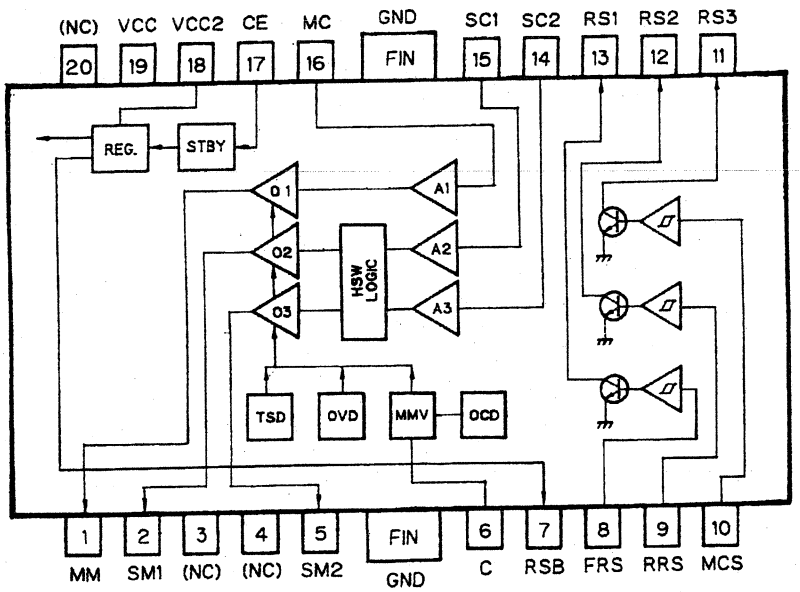


PA2020A



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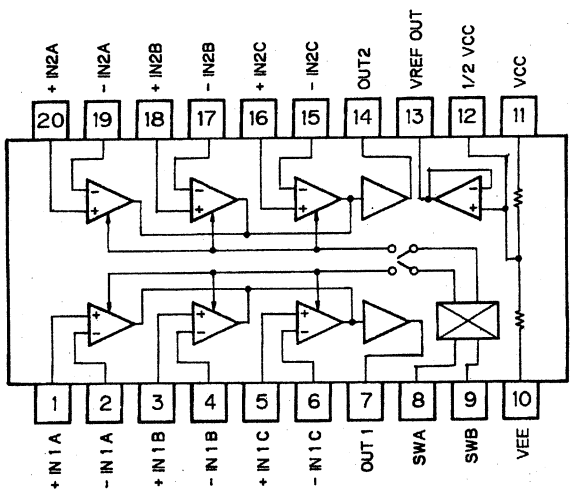
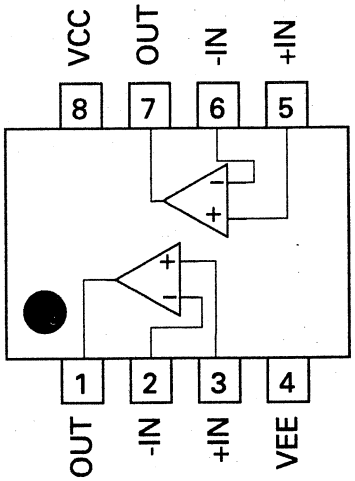
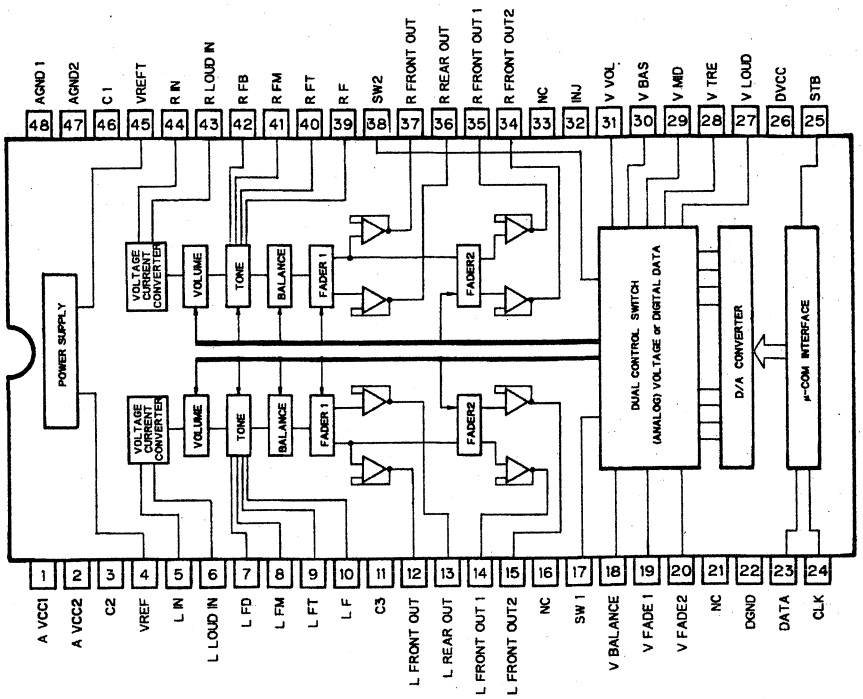


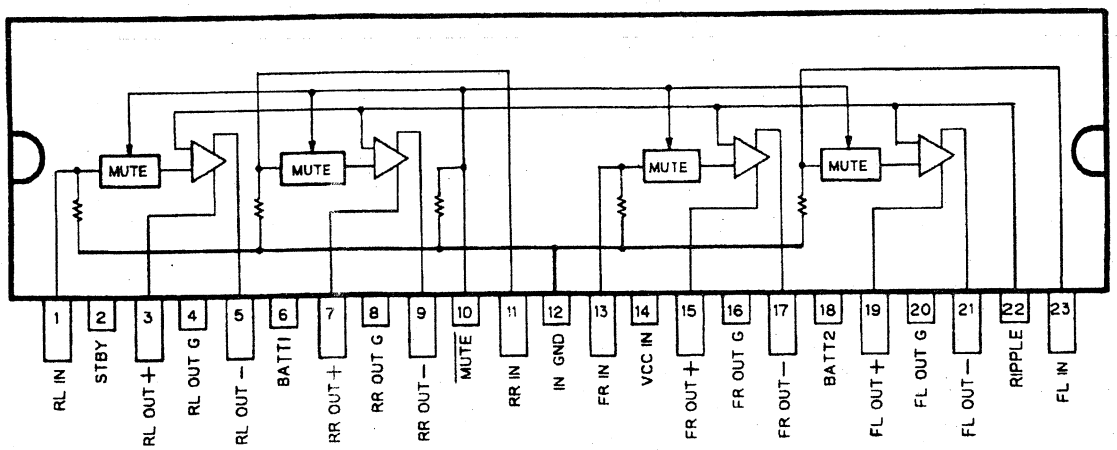
NJM4458MD,NJM2068MD



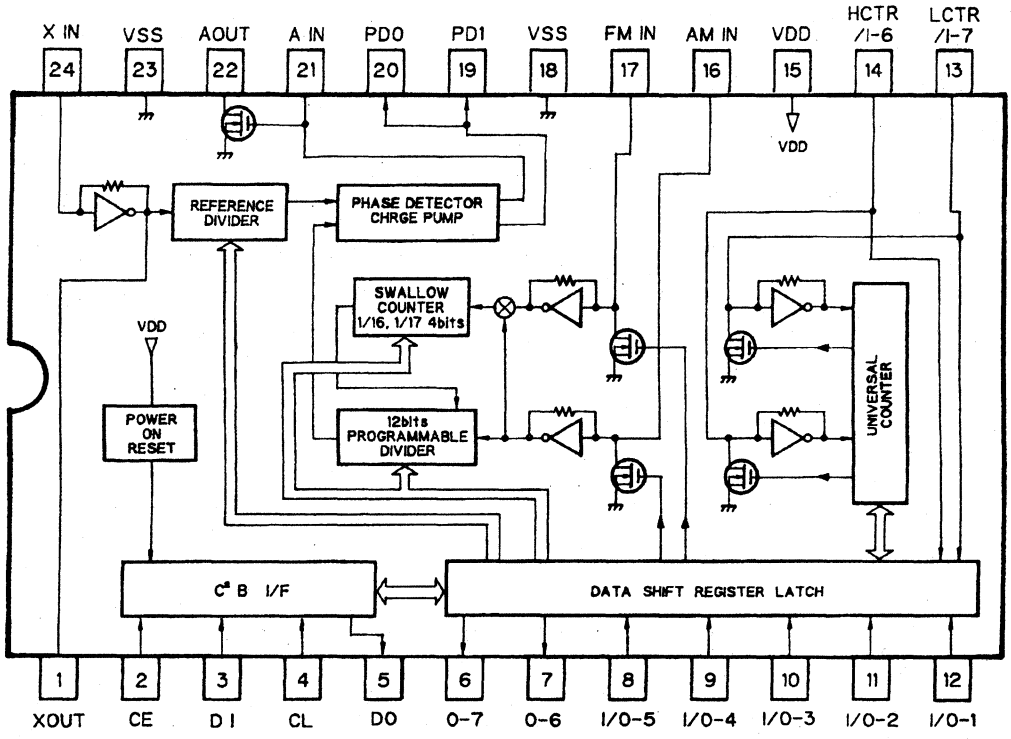
PM0004AM1
PM0004AM



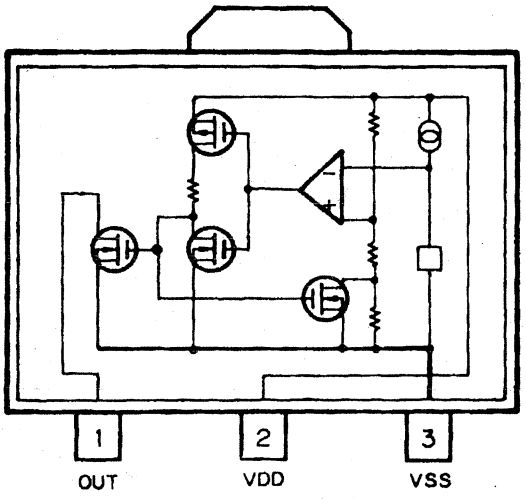
PA3027A



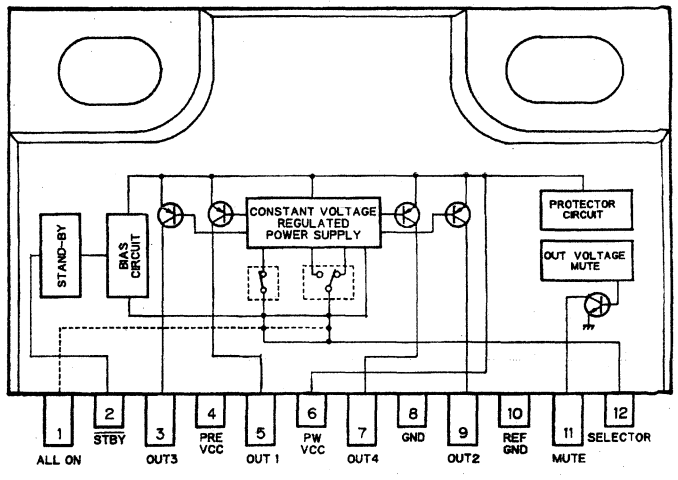
LC72140M



S-8073AN-DY



PA2023A



● **Pin Functions(PD4478A)**

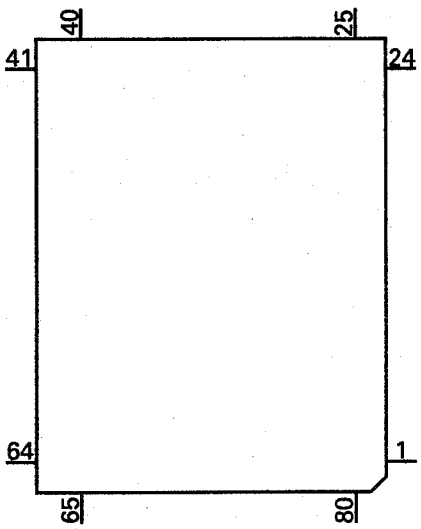
Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	DILM	O	C	Dual illumination output
2	$\overline{\text{RDSRST}}$	O	C	Reset output for RDS IC
3	RDSSEL	O	C	Select output for RDS IC
4	AVSS			A/D GND
5	$\overline{\text{RDSEN}}$	O	C	Enable output for RDS IC
6	RDSRDY	I		Ready input from RDS IC
7	AVREF	I		A/D converter reference voltage
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	SWVDD	O	C	Grille power supply control output
11	RDSDI	I		Serial data input for RDS IC
12	RDSDO	O	C	Serial data output for RDS IC
13	$\overline{\text{RDSCK}}$	O	C	Serial clock output for RDS IC
14	PDI	I		PLL data input
15	PCK	O	C	PLL clock output
16	PDO/TSI		C	PLL data output/Test program input
17	PCE/TSO		C	PLL enable/Test program output
18	MON/$\overline{\text{TSCK}}$	O	C	Monaural output/Test program clock
19	NC			Not used
20	TUNPW	O	C	Tuner power control output
21	PLAY	O	C	MS gain select output
22	$\overline{\text{DLBYBC}}$	O	C	Dolby NR B/C select output
23	NR	O	C	Dolby output
24	SC1	O	C	Cassette mechanism sub motor control output
25	SC2	O	C	Cassette mechanism sub motor control output
26	CM	O	C	Cassette mechanism capstan motor control output
27	MSIN	I		Cassette mechanism MS sense input
28	$\overline{\text{N/R}}$	I		Tape direction input
29	$\overline{\text{MTLSW}}$	I		Metal sense input
30	LOADSW	I		Tape loading input
31	POS	I		Cassette mechanism position sense input
32	RES	I		Cassette mechanism reverse end sense input
33	VSS			GND
34	NES	I		Cassette mechanism normal end sense input
35	$\overline{\text{STBY}}$	O	C	Stand-by output
36	VOC	O	NM	Audition output
37	SUBW0	O	NM	Sub woofer control 0
38	SUBW1	O	NM	Sub woofer control 1
39–41	NC			Not used
42	$\overline{\text{BUSMUTE}}$	O	C	IP BUS mute output
43	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
44	$\overline{\text{DMUTE}}$	O	C	Deck mute output
45	PEE	O	C	Beep tone output
46	$\overline{\text{MUTE}}$	O	C	System mute
47	SOR0	O	C	Source select output
48	SOR1	O	C	Source select output
49	PCL	O	C	Clock adjustment output
50	NC			Not used
51	FIX	O	C	Diversity control output
52	FM/$\overline{\text{AM}}$	O	C	FM/AM power select output
53	ILMPW	O	C	Illumination power supply control output
54	SYSPW	O	C	System power supply control output
55	ASENSB	I	C	Acc sense input
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58	$\overline{\text{APPW}}$	O	C	Serial IC power supply control output
59	SD	I		SD input
60	$\overline{\text{RESET}}$	I		Reset input

Pin No.	Pin Name	I/O	Output Format	Function and Operation
61	TELIN	I		TEL mute signal input
62	$\overline{\text{BSENS}}$	I		Back up power sense input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	$\overline{\text{DSENS}}$	I		Grille detach sense
65	VST	O	C	Strobe pulse output for electronic volume
66	VDT	O	C	Data output for electronic volume
67	VCK	O	C	Clock output for electronic volume
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			GND
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0	I		A/D converter reference voltage
76	SL	I		Signal level input
77	SEL0	I		Model select pin
78	SEL1	I		Model select pin
79,80	NC			Not used

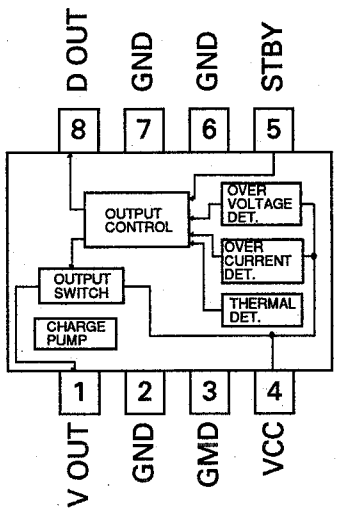
Output Format	Meaning
C	C MOS output
NM	Middle resistivity N channel open drain

IC's marked by are MOS type.*
Be careful in handing them because they are very liable to be damaged by electrostatic induction.

*PD4478A



PML001A



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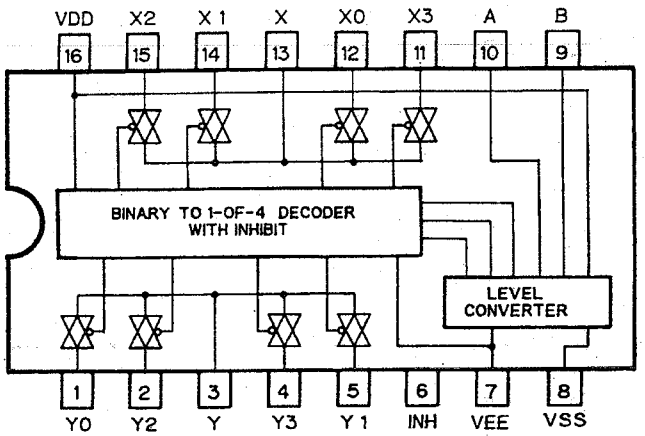
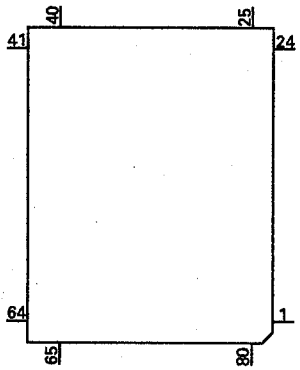


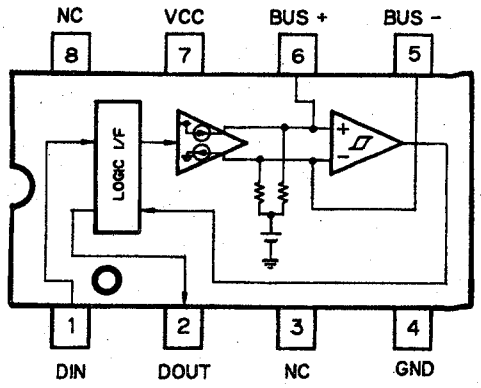
● **Pin Functions (PD6122A)**

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	RESET	I	Reset Input
5,6	MODEL1,0	I	Model select input
7	R/Y	O	Function LED select output
8	KYDT	O	Key data output
9	DPDT	I	Display data input
10	REMIN	I	Remote control pulse input
11	ILM	O	Illumination color select output
12	R/Y	O	Function LED select output
13–16	KD4–KD1	I	Key sense input
17–22	KST6–1	O	Key strobe output
23	VCC		5V
24–34	NC		Not used
35–73	SEG38–0		LCD segment output
74–77	COM3–0	O	LCD common output
78–80	V3–V1		Power supply terminal

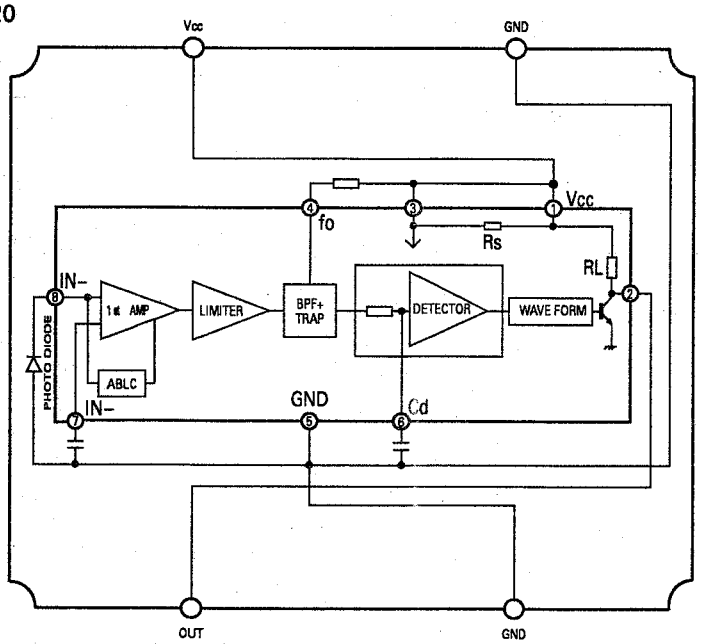
*PD6122A



PA0051AM



RS-20



5.ELECTRICAL PARTS LIST

NOTES:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Circuit Symbol & No.	Part Name	Part No.
Unit Number	:CWE1312	
Unit Name	:FM/AM Tuner Unit	
MISCELLANEOUS		
IC 1		PA2021A
IC 2		PA2022A
Q 1		3SK195
Q 2 202		2SC2712
Q 3		DTC124EU
Q 51		DTC124TU
Q 52		2SC4207
Q 201		2SK435
D 1		1SV172
D 2 3 4		KV1410
D 5		MA151WK
D 6 151 202		MA157
D 201		MA157
D 203		SVC203CP
L 1	Inductor	LCTBR12K2125
L 2 52	Ferri-Inductor	LAU150K
L 51	Ferri-Inductor	LAU2R2K
L 201	Ferri-Inductor	LAU4R7K
L 202	Coil1mH	CTF1026
L 203	Inductor	LAU390K
L 204	Ferri-Inductor	LAU680K
L 205	Ferri-Inductor	LAU330K
L 206	Inductor	CTF1198
T 1	Coil	CTC1078
T 2	Coil	CTE1077
T 3	Coil	CTC1077
T 4	Coil	CTC1079
T 51	Coil	CTC1081
T 202	Coil	CTB1103
T 203	Coil	CTE1076
T 204	Coil	CTE1074
T 205	Coil	CTE1075
CF 1 51 52	Ceramic Filter	CTF1290
CF 201	Ceramic Filter	CTF1291
CF 202	Ceramic Filter	CTF1300
X 151	Ceramic Resonator 456kHz	CSS1308
X 201	Crystal Resonator 10.26MHz	CSS1111
VR 51 152	Semi-fixed 22kΩ(B)	CCP1210
VR 52	Semi-fixed 68kΩ(B)	CCP1211
VR 151	Semi-fixed 10kΩ(B)	CCP1206
AR 1	Capacitor with Discharge Gap	DSP-201M
RESISTORS		
R 1		RS1/16S152J
R 2		RS1/16S271J
R 3 10 16 18 20 103		RS1/16S223J
R 4 5		RS1/16S0R0J
R 6		RS1/16S680J
R 7 14		RS1/16S563J
R 8		RS1/16S331J
R 9		RS1/16S473J
R 11		RS1/16S474J
R 12		RS1/16S123J
R 13 15 217		RS1/16S563J
R 17 206		RS1/16S102J
R 21 22		RS1/16S560J
R 51 74		RS1/16S391J
R 52		RS1/16S152J
R 53		RS1/16S751J
R 54		RS1/16S393J
R 55 157		RS1/16S682J
R 56		RS1/16S332J
R 58 73 203		RS1/16S102J
R 72		RS1/16S391J
R 101		RS1/16S224J
R 102 104 222		RS1/16S822J
R 151 152		RS1/16S272J
R 153		RS1/16S103J
R 154 155 202		RS1/16S103J
R 156		RS1/16S153J
R 158		RS1/16S393J
R 159 216		RS1/16S103J
R 204 213		RS1/16S222J
R 205		RS1/16S823J
R 207		RS1/16S225J
R 208		RS1/16S752J
R 209		RS1/16S822J
R 214		RS1/16S333J
R 215		RS1/16S330J
R 218		RS1/16S333J
R 220		RS1/16S100J
R 221		RS1/16S473J
R 223		RS1/16S563J
CAPACITORS		
C 1 54		CCSRCH220J50
C 2		CCSRCH390J50
C 3 102 103 154 163 203 210		CKSQYB473K16
C 4 12		CCSRCH070D50
C 5 53		CCSRCH270J50
C 6		CKSRYB222K50
C 7		CCSRCH040C50
C 8 105		CKSRYB222K50
C 9 16		CCSRCH470J50
C 10		CCSRCH090D50
C 11		CKSRYB223K25
C 13		CCSRCH070D50
C 14		CKSQYB103K25
C 15 22 55 101 151 164 219 220 225 227		CKSQYB104K25
C 17		CCSRCH100D50

=====Circuit Symbol & No. Part Name=====	Part No.
C 18	CCSRCH080D50
C 19 20 21 52 62 71 74 201 207	CKSRYB103K50
C 23	CEA3R3M50LL
C 24 29 73 106 213	CKSRYB223K25
C 25	CKSRYB682K50
C 26 28 231	CEA101M16LL
C 51 223	CKSRYB103K50
C 56 162 211	CEA010M50LL
C 57 64 66 237	CCSRCH101J50
C 58	CKSRYB153K25
C 60	CEAR47M50LL
C 61	CEAR22M50LL
C 63	CKSQYB104K25
C 65	CEA0R1M50LL
C 104 226	CEA4R7M35LL
C 152 153	CKSRYB333K25
C 155	CEAR15M50LL
C 156	CKSQYB333K25
C 158 212	CEA100M16LL
C 159	CCSRCH331J50
C 160	CSZS010M16
C 161	CKSQYB104K25
C 202	CKSRYB332K50
C 204	CCSRCH120J50
C 205	CCSRCH560J50
C 206 221	CCSRCH680J50
C 208	CEA470M16LL
C 209 215 228	CKSRYB103K50
C 214 230	CKSRYB472K50
C 216	CCSRCH100D50
C 217	CCSRCH221J50
C 218 234	CEA220M16LL
C 222	CCSRCH150J50
C 224	CCSRCH181J50
C 229	CEAR68M50LL
C 232	CCSRCH390J50
C 233	CKSRYB332K50
C 235	CKSQYB104K25
C 236	CKSRYB223K25

Unit Number :CWM3114(KEH-P770/UC,KEH-P7000/UC)
Unit Number :CWM3113(KEH-P7005/ES)
Unit Name :Deck Unit

MISCELLANEOUS

IC 251	(KEH-P770/UC,KEH-P7000/UC)	HA12173
IC 251	(KEH-P7005/ES)	HA12163
IC 351		PA2020A
Q 271		2SC4116
Q 351		2SB1260
Q 352		2SC4102
D 351		MA141K
VR 301 302	Semi-fixed 33kΩ (B)	CCP1130

RESISTORS

R 251 252 253 254	RS1/10S104J
R 255 256	RS1/10S181J
R 257 258	RS1/10S183J
R 259 260	RS1/10S133J
R 261 262	RS1/10S274J
R 271	RS1/10S183J
R 272 273 322	RS1/10S223J
R 274	RS1/10S103J
R 275	RS1/10S473J
R 276 278	RS1/10S104J

=====Circuit Symbol & No. Part Name=====	Part No.
R 277	RS1/10S224J
R 279 280	RS1/10S223J
R 301 302 (KEH-P770/UC,KEH-P7000/UC)	RS1/10S223J
R 303 304 (KEH-P770/UC,KEH-P7000/UC)	RS1/10S561J
R 321 (KEH-P770/UC,KEH-P7000/UC)	RS1/10S223J
R 351 352	RS1/10S102J
R 353 354	RS1/10S102J
R 355	RS1/10S274J
R 356	RS1/10S202J
R 357	RS1/10S472J
R 358 359	RS1/10S103J
R 360	RS1/10S102J
R 361	RS1/10S622J
R 401	RS1/10S273J
R 402	RS1/10S223J
R 403 405	RS1/10S274J
R 404	RS1/10S823J

CAPACITORS

C 251 252 253 254	CKSQYB471K50
C 255 256 353	CKSQYB103K50
C 257 258	CEVNP010M50
C 271	CEV010M50
C 272	CKSQYB104K25
C 301 302	CEVNPR47M50
C 303 304 305 (KEH-P770/UC,KEH-P7000/UC)	CKSQYB222J50
C 307 308 (KEH-P770/UC,KEH-P7000/UC)	CKSQYB222J50
C 309 310	CKSQYB104K16
C 311 312 (KEH-P770/UC,KEH-P7000/UC)	CKSQYB104K16
C 322 (KEH-P770/UC,KEH-P7000/UC)	CEV100M16
C 351	CKSYB224K25
C 352	CKSQYB392K50
C 354	CKSQYB473K50
C 355	CKSYB104K50
C 356	CKSQYB103K50
C 401	CKSQYB182K50
C 402	CKSQYB822K50
C 403	CKSQYB333K50
C 404	CKSQYB471K50

Unit Number :CWM3583
Unit Name :Tuner Amp Unit

MISCELLANEOUS

IC 451		TA2050S
IC 452		XRA3131FS
IC 453	(KEH-P770/UC,KEH-P7000/UC)	PM0004AM1
IC 453	(KEH-P7005/ES)	PM0004AM
IC 501		LC72140M
IC 551		PA3027A
IC 631 641		NJM2068MD1
IC 651	(KEH-P770/UC)	NJM4558MD
IC 652	(KEH-P770/UC)	MC14052BF
IC 701		PD4478A
IC 703		S-80734AN-DY
IC 704		PA2023A
IC 705		PML001A
IC 706		PA0051AM1
Q 451 452 703 711		2SC2712
Q 501		2SC3098
Q 502		2SC3295
Q 503 505		2SK208
Q 504 506 507 708 710		2SC2712
Q 551 704 707		DTC124EK
Q 552		DTC124EK
Q 631 632 642		DTC314TK
Q 641		DTC314TK
Q 701		DTA114EK
Q 702		2SB124-3

=====Circuit Symbol & No.	Part Name=====	Part No.
Q 705 713 951	Chip Transistor	2SA1162
Q 706		DTC114EK
Q 709		DTA114EK
Q 712		2SD1760F5
Q 714		DTC124EK
D 501		MA3027H
D 502		MA3027H
D 503 709 951	Chip Diode	MA151WK
D 551 552 553 554 555 556 557 558 712		ERA15-02VH
D 703 704 705		MA153
D 706		MA3062H
D 707		MA151K
D 710		MA3075H
D 711		MA3082L
D 713		MA3056M
L 501	Ferri-Inductor	CTF-157
L 502 701	Ferri-Inductor	LAU2R2K
L 702	Ferri-Inductor	LAU2R2M
L 703 704 951	Ferri-Inductor	LAU2R2K
TC 701	Trimmer	CCG-070
X 501	Crystal Resonator	CSS1011
X 701		CSS1303
S 701	Switch	CSG1046
BZ 701		CPV1011
	FM/AM Tuner Unit	CWE1312

RESISTORS

R 401 402	RS1/10S331J
R 403	RS1/10S272J
R 404 706 744 745 764 765 954	RS1/10S102J
R 405	RS1/10S103J
R 406	RS1/10S103J
R 407 408	RS1/10S273J
R 451 452 528 534 535 536 704 713 756 757	RS1/10S473J
R 453 454 459 460 479 480 513 518 519 520	RS1/10S102J
R 455 456	RS1/10S181J
R 457 458 507 639 746 758	RS1/10S223J
R 461 462 463 464 465 466	RS1/10S104J
R 467 468	RS1/10S123J
R 469 470	RS1/10S683J
R 471 472 475 476	RS1/10S303J
R 473 474	RS1/10S153J
R 477 478	RS1/10S183J
R 481 482	RS1/10S153J
R 483 484 509 514 523 570 734	RS1/10S103J
R 485 486	RS1/10S562J
R 487 488	RS1/10S562J
R 489 490 567 748 762	RS1/10S103J
R 491 492 493 511 526 527 537 538 558 738	RS1/10S472J
R 501	RS1/10S101J
R 502	RS1/10S332J
R 503	RS1/10S821J
R 504	RS1/10S331J
R 505	RS1/10S680J
R 506 515 516 524 525 735 747 763	RS1/10S222J
R 508 569	RS1/10S221J
R 510 517 521	RS1/10S102J
R 512	RS1/10S152J
R 522	RS1/10S123J
R 529	RS1/10S473J
R 530 531 532 533	RS1/10S222J
R 539	RS1/10S822J
R 540	RS1/10S102J
R 541	RS1/10S330J
R 542	RS1/10S102J
R 551 552 553	RS1/10S272J
R 554	RS1/10S272J

=====Circuit Symbol & No.	Part Name=====	Part No.
R 555 556 557 737 753 770 952 953		RS1/10S472J
R 559 560 561 562 563 564 565 566		RS1/10S2R2J
R 568		RS1/10S153J
R 633 634		RS1/10S223J
R 635 636		RS1/10S153J
R 637 638 645		RS1/10S102J
R 640 647 648 752 755		RS1/10S223J
R 641		RS1/10S223J
R 642		RS1/10S223J
R 643 644		RS1/10S153J
R 646		RS1/10S102J
R 651 652	(KEH-P770/UC)	RS1/10S333J
R 653 654 655 664	(KEH-P770/UC)	RS1/10S104J
R 656 657 658	(KEH-P770/UC)	RS1/10S104J
R 659	(KEH-P770/UC)	RS1/10S105J
R 660 661	(KEH-P770/UC)	RS1/10S103J
R 662	(KEH-P770/UC)	RS1/10S473J
R 663	(KEH-P770/UC)	RS1/10S123J
R 701		RS1/10S620J
R 702 703 760 971 972		RS1/10S101J
R 705		RS1/10S124J
R 707	(KEH-P770/UC,KEH-P7000/UC)	RS1/10S473J
R 707	(KEH-P7005/ES)	RS1/10S223J
R 708	(KEH-P770/UC,KEH-P7000/UC)	RS1/10S223J
R 708	(KEH-P7005/ES)	RS1/10S473J
R 709	(KEH-P7000/UC)	RS1/10S473J
R 710	(KEH-P770/UC,KEH-P7005/ES)	RS1/10S473J
R 710	(KEH-P7000/UC)	RS1/10S223J
R 711 712		RS1/10S102J
R 714		RA4C473J
R 718		RA2CQ473J
R 720 724		RA4C222J
R 728		RA2CQ222J
R 731		RA4C681J
R 736		RS1/2S681J
R 739 740 741 742 743 749 761		RS1/10S472J
R 754		RS1/10S473J
R 759 767 768 955		RS1/10S473J
R 766		RS1/10S683J
R 769		RS1/10S220J
R 792		RS1/10S0R0J
R 793		RS1/10S101J
R 951		RS1/10S183J
R 961 962		RS1/10S682J
R 973 974 975 976		RS1/10S0R0J
R 977 978		RS1/10S681J
R 991 992	(KEH-P7000/UC,KEH-P7005/ES)	RS1/10S0R0J

CAPACITORS

C 401 402	CEAR33M50LL
C 403 404	CKSQYB272K50
C 405 406 415 416 461 462 470 471 472 483	CEA100M16LL
C 407 408 409 411 413	CKSQYB822K50
C 410 412 414	CKSQYB822K50
C 451 452 453 454 455 456 457 458	CEA010M50LL
C 459 460 720	CEA010M50LL
C 463 464	CCSQCH270J50
C 465 466	CCSQCH121J50
C 467 468	CCSQCH121J50
C 469 635 636 645 646 710	CEA2R2M50LL
C 473 474	CKSQYB333K25
C 475 476	CKSQYB682K50
C 477 478	CKSQYB682K50
C 479 480	CKSQYB683K25

=====Circuit Symbol & No. Part Name=====	Part No.
C 481 482	CKSQYB681K50
C 484 485 486 495 570 707	CEA100M16LL
C 487	CKSYB104K25
C 488	CKSYF105Z25
C 489 491 492 494 559 560 561 562 563	CKSYB104K25
C 490	CKSYF105Z25
C 493	CEA470M10LL
C 496	CEA100M16LL
C 501	CCSQSL681J50
C 502 505 507 510 713	CKSQYB103K25
C 503 709	CCSQCH101J50
C 504 511 512 516 705 708 731	CCSQCH101J50
C 506 4.7μF/16V	CCH1165
C 508 0.047μF/16V	CCG1008
C 509	CFTNA474J50
C 513 706	CEA4R7M35LL
C 514 515	CKSQYB223K25
C 517 518 704	CCSQCH120J50
C 519	CKSQYB103K25
C 520	CKSQYB473K16
C 524 525	CCSQCH101J50
C 551 552 553 554	CEA4R7M35LL
C 555 556 557	CKSQYB102K50
C 558	CKSQYB102K50
C 564 565 566	CKSYB104K25
C 567 568	CKSQYB104K16
C 569	CEA330M10LL
C 571	CEHAQ472M16
C 633 634	CCSQSL101J50
C 637 727	CKSQYB102K50
C 638 647 648 728	CKSQYB102K50
C 643 644	CCSQCH101J50
C 649 (KEH-P770/UC)	CEA220M10LL
C 650 (KEH-P770/UC)	CKSQYB103K25
C 651 (KEH-P770/UC)	CKSQYB102K50
C 652 (KEH-P770/UC)	CKSQYB273K25
C 653 (KEH-P770/UC)	CKSQYB473K16
C 654 (KEH-P770/UC)	CKSQYB223K25
C 655 (KEH-P770/UC)	CKSQYB822K50
C 656 (KEH-P770/UC)	CKSQYB223K25
C 657 (KEH-P770/UC)	CKSQYB153K25
C 703	CCSQCH330J50
C 711	CEAS102M16
C 714	CEA470M10LL
C 715	CKSQYB473K50
C 716	CEAS331M10
C 717 719	CEA470M10LL
C 718	CEA101M10LL
C 722	CSZA100K16
C 723	CKSQYB104K16
C 729 732	CKSQYB102K50

Unit Number :CWM3593
Unit Name :Key Board Unit

MISCELLANEOUS

IC 901	PD6122A
IC 902	PS-20
Q 901 902	2SB1132
Q 903	DTC124EK
Q 904 905	2SC2712
D 901 902	MA153
D 904 LED	PRPY1201W
L 901 Inductor	LCTA100K4532
X 901	CSS1084
S 901 902 903 904 905 906 907 908 909 910	CSG1041

=====Circuit Symbol & No. Part Name=====	Part No.
S 911 912 913 914 915 916 917 918 919 920	CSG1041
S 921 922 Switch	CSG1041
IL 901 902 903 904 905 906 Lamp	CEL1297
IL 907 908 909 910 911 912 Lamp	CEL1296
LCD 901 LCD	CAW1249

RESISTORS

R 901 902 904 906	RS1/10S222J
R 905 907 932 933	RS1/10S302J
R 908 909 910 911 912 913 914 915 916 917	RS1/10S471J
R 918 919	RS1/10S471J
R 920	RS1/10S472J
R 921	RS1/10S470J
R 924 937 938	RS1/10S0R0J
R 925 927	RS1/10S223J
R 926 928	RS1/10S473J
R 929 931 934 935	RS1/8S152J

CAPACITORS

C 901 902 903 906	CKSQYB103K25
C 904 905	CSZSR100M6R3

Unit Number :CWM3618
Unit Name :Power Supply Filter Unit

D 791 792 793 794	ERA15-02VH
L 791	CTH1103
EF 791	CCG1006

Unit Number :CXA6425(KEH-P770/UC,KEH-P7000/UC)
Unit Name :Case Assy

S 1001	Switch	
MSW1713		
R 1001		RD1/5PS100JL
D 1001	LED	HAA5066X
BAT1001	Battery	CEX1022

Unit Number :ENP1120(KEH-P770/UC,KEH-P7000/UC)
:ENP1106(KEH-P7005/ES)
Unit Name :Mechanism P.C.Board

S	1	2 Switch	CSN1022
EGN	1	2 Photo-Interrupter	NJL5181KA-F10
R	1	(KEH-P770/UC,KEH-P7000/UC)	RD1/4HM271J
R	2	(KEH-P770/UC,KEH-P7000/UC)	RD1/4HM681J
R	1	(KEH-P7005/ES)	RD1/8HM271J
R	2	(KEH-P7005/ES)	RD1/8HM681J

Miscellaneous Parts List

EGN	3	Photo-Interrupter	EGN1002
M	1	Motor Unit (MAIN)	EXA1278
M	2	Motor Unit (SUB)	EXA1334
HD	1	Head Assy	EXA1301

6.PACKING METHOD

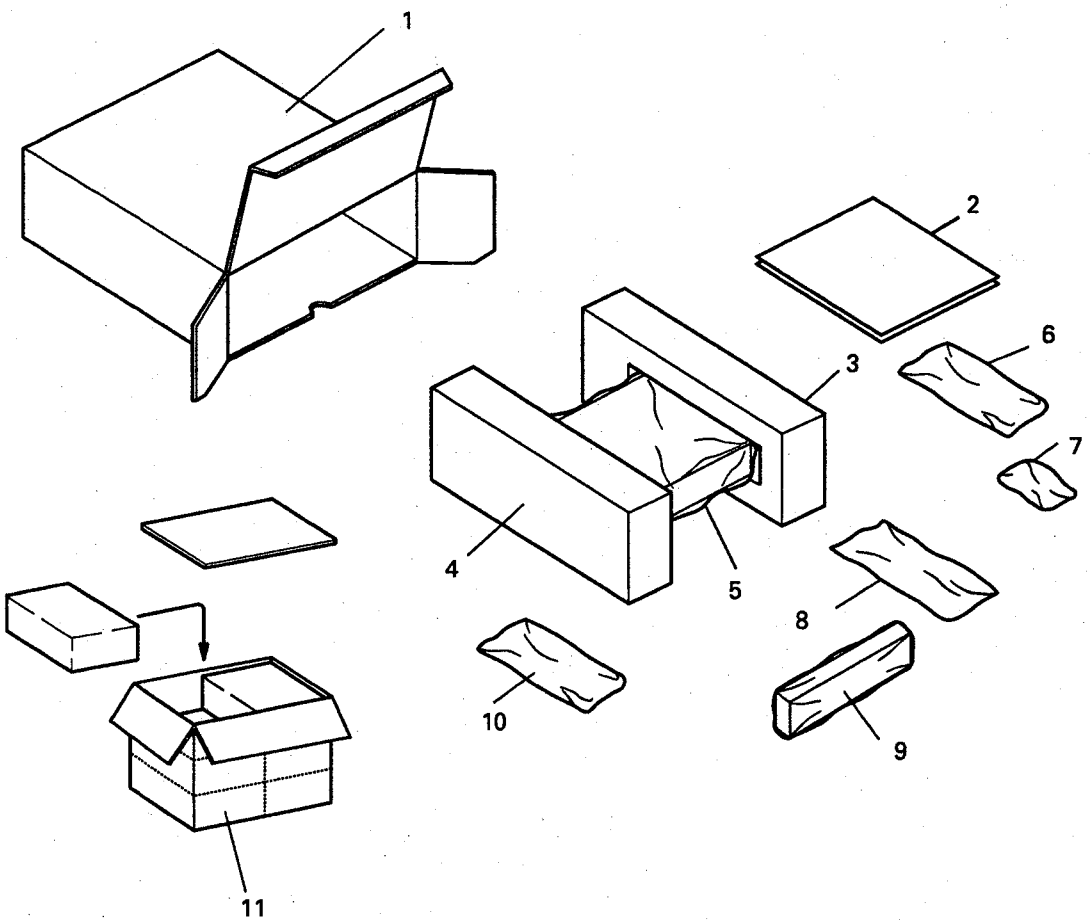


Fig.16

● **Parts List** ✱:Non spare Parts

Mark No.	Description	Part No.
1	Carton(KEH-P770/UC)	CHG2385
	Carton(KEH-P7000/UC)	CHG2384
	Carton(KEH-P7005/ES)	CHG2383
2-1	Owner's Manual(KEH-P770/UC)	CRD1734
	Owner's Manual(KEH-P7000/UC)	CRD1733
	Owner's Manual(KEH-P7005/ES)	CRD1678
✱ 2-2	Warranty Card(KEH-P770/UC)	CRY1053
3	Protector	CHP1606
4	Protector	CHP1607
5	Cover	CEG1092
6	Accessory Assy	CEA1473
7	Remote Control Assy (KEH-P770/UC)	CXA5856
	Remote Control Assy (KEH-P7000/UC,KEH-P7005/ES)	CXA5857
8	Accessory Assy	CEA1918
9	Case Assy (KEH-P770/UC,KEH-P7000/UC)	CXA5780
	Case (KEH-P7005/ES)	CNS2269
10	Cord Assy	CDE4184
11	Contain Box	CHL2385

● Accessory Assy

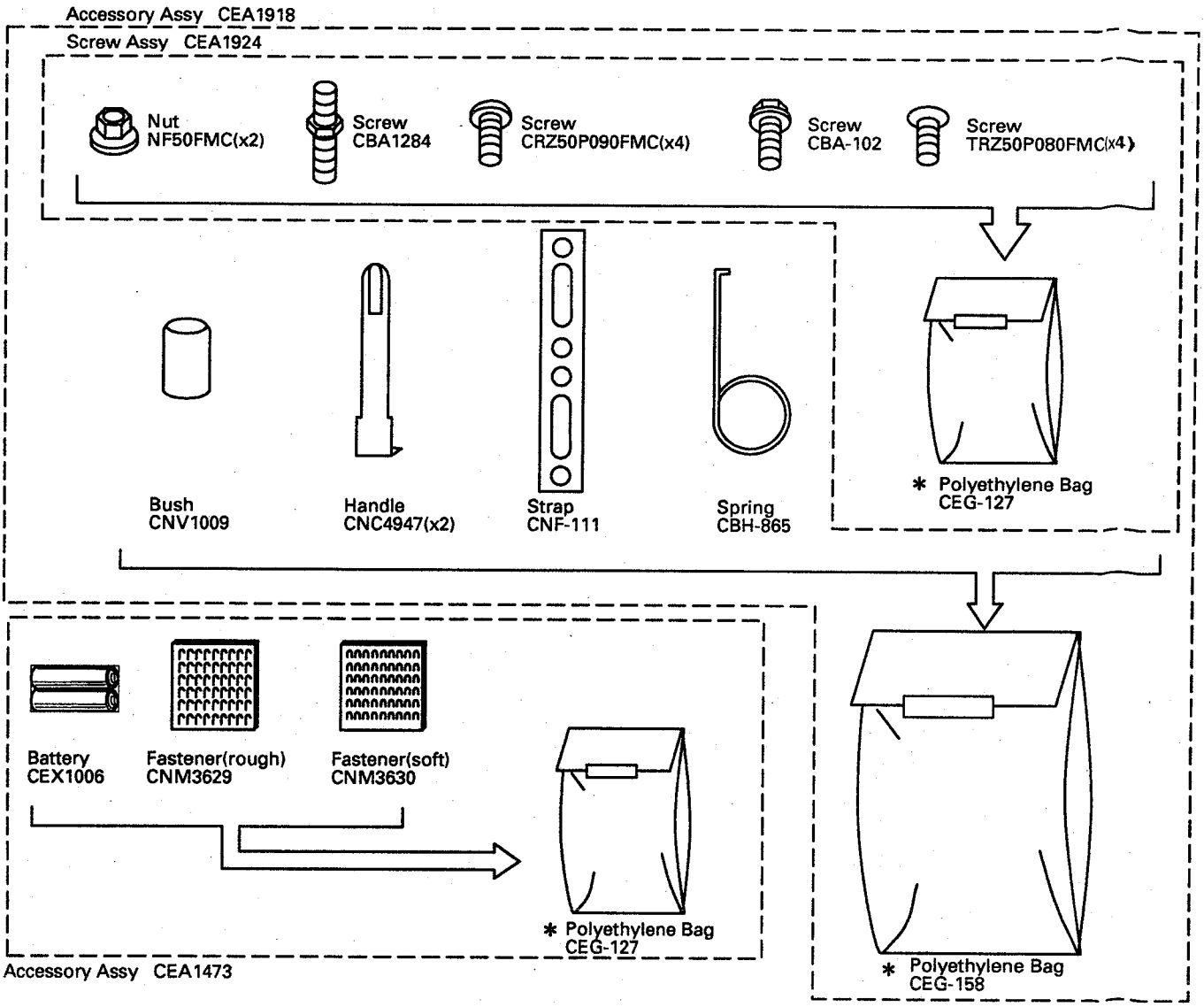


Fig.17

● Owner's Manual

Part No.	Language
CRD1734	English,French
CRD1733	English,French
CRD1678	English,French,Spanish,Arabic

7. CASSETTE MECHANISM MODULE EXPLODED VIEW PARTS LIST

● **Parts List(KEH-P770/UC)**

Mark No.	Description	Part No
1	Arm	ENV1424
2	Screw	BSZ20P040FMC
3	Screw(M2x4)	CBA1015
4	Washer	CBF1037
5	Washer	CBF1038
6	Washer	CBG1003
7	Spring	EBH1488
8	Deck Unit	CWM3114
9	Spring	EBH1458
10	Spring	EBH1434
11	Spring	EBH1435
12	Spring	EBH1437
13	Spring	EBH1464
14	Spring	EBH1439
15	Spring	EBH1440
16	Spring	EBH1441
17	Spring	EBH1442
18	Spring	EBH1443
19	Spring	EBH1446
20	·····	
21	Spring	EBL1016
22	Connector(CN252)	CKS2127
23	Photo-Interrupter	EGN1002
24	Roller	ELA1281
25	Shaft	ELA1282
26	Roller	ELA1283
27	Cover	ENC1307
28	Connector(CN251)	CKS1711
29	Connector(CN253)	CKS2129
30	Arm	ENC1310
31	Arm	ENC1311
32	Lever	ENC1312
33	Holder	ENC1365
34	Cover	ENC1372
35	Lever	ENC1315
36	Lever	ENC1353
37	Bracket	ENC1317
38	Arm	ENC1335
39	P.C.Board	ENP1109
40	P.C.Board	ENP1106
41	P.C.Board	ENP1107
42	Roller	ENR1023
43	Belt	ENT1027
44	Gear	ENV1346
45	Gear	ENV1347
46	Gear	ENV1348
47	Collar	ENV1349
48	Gear	ENV1350
49	Gear	ENV1351
50	Gear	ENV1354
51	Gear	ENV1355
52	Gear	ENV1357
53	Gear	ENV1358
54	Gear	ENV1359
55	Clamper	ENV1360
56	Clamper	ENV1361
57	Arm	ENV1362
58	Gear	ENV1363
59	Flywheel	ENV1410
60	Head Assy	EXA1301
61	Arm Unit	EXA1276
62	Arm Unit	EXA1277
63	Motor Unit	EXA1278
64	Motor Unit	EXA1334
65	Head Base Unit	EXA1340
66	Gear Unit	EXA1281
67	Guide Unit	EXA1356
68	Chassis Unit	EXA1339
69	Pinch Roller Unit	EXA1284
70	Pinch Roller Unit	EXA1285
71	Reel Unit	EXA1306
72	Arm Unit	EXA1338
73	Sub Chassis Unit	EXA1312
74	Arm Unit	EXA1289
75	Spare Unit	EXA1293
76	Screw	HBA-147
77	Washer	HBF-179
78	Screw	JGZ20P025FNI
79	Screw	PMS20P022FUC
80	·····	
81	·····	
82	Washer	YE15FUC
83	Washer	YE20FUC
84	Washer	YE25FUC
85	Frame Unit	EXA1290
86	Lever	ENC1308
87	Lever	ENC1309
88	Screw	EBA1033
89	Spring	ELB1020
90	Screw	JFZ17P025FNI

● **Parts List(KEH-P7000/UC,KEH-P7005/ES)**

Mark No.	Description	Part No
1	Screw	BMZ20P060FMC
2	Screw	BSZ20P040FMC
3	Screw(M2x4)	CBA1015
4	Washer	CBF1037
5	Washer	CBF1038
6	Washer	CBG1003
7	Switch	CSN1022
8	Deck Unit(KEH-P7000/UC)	CWM3114
	Deck Unit(KEH-P7005/ES)	CWM3113
9	Spring	EBH1458
10	Spring	EBH1434
11	Spring	EBH1435
12	Spring	EBH1437
13	Spring	EBH1464
14	Spring	EBH1439
15	Spring	EBH1440
16	Spring	EBH1441
17	Spring	EBH1442
18	Spring	EBH1443
19	Spring	EBH1446
20	·····	
21	Spring	EBL1016
22	Connector(CN252)	CKS2127
23	Photo-Interrupter	EGN1002
24	Roller	ELA1281
25	Shaft	ELA1282
26	Roller	ELA1283
27	Cover	ENC1307
28	Connector(CN251)	CKS1711
29	Connector(CN253)	CKS2129
30	Arm	ENC1310
31	Arm	ENC1311
32	Lever	ENC1312
33	Holder	ENC1365
34	Cover	ENC1372
35	Lever	ENC1315
36	Lever	ENC1353
37	Bracket	ENC1317
38	Arm	ENC1335
39	P.C.Board	ENP1109
40	P.C.Board	ENP1106
41	P.C.Board	ENP1107
42	Roller	ENR1023
43	Belt	ENT1027
44	Gear	ENV1346
45	Gear	ENV1347

Mark No.	Description	Part No
46	Gear	ENV1348
47	Collar	ENV1349
48	Gear	ENV1350
49	Gear	ENV1351
50	Gear	ENV1354
51	Gear	ENV1355
52	Gear	ENV1357
53	Gear	ENV1358
54	Gear	ENV1359
55	Clamper	ENV1360
56	Clamper	ENV1361
57	Arm	ENV1362
58	Gear	ENV1363
59	Flywheel	ENV1410
60	Head Assy	EXA1301
61	Arm Unit	EXA1276
62	Arm Unit	EXA1277
63	Motor Unit	EXA1278
64	Motor Unit	EXA1334
65	Head Base Unit	EXA1340
66	Gear Unit	EXA1281
67	Guide Unit	EXA1356
68	Chassis Unit	EXA1339
69	Pinch Roller Unit	EXA1284
70	Pinch Roller Unit	EXA1285
71	Reel Unit	EXA1306
72	Arm Unit	EXA1338
73	Sub Chassis Unit	EXA1312
74	Arm Unit	EXA1289
75	Spare Unit	EXA1293
76	Screw	HBA-147
77	Washer	HBF-179
78	Screw	JGZ20P025FNI
79	Screw	PMS20P022FUC
80	·····	
81	·····	
82	Washer	YE15FUC
83	Washer	YE20FUC
84	Washer	YE25FUC
85	Frame Unit	EXA1290
86	Lever	ENC1308
87	Lever	ENC1309
88	·····	
89	Spring	ELB1020
90	Screw	JFZ17P025FNI

8. EXPLODED VIEW PARTS LIST

NOTES:

- Parts marked by "✱"are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by "◉"are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● **Parts List**

Mark No.	Description	Part No
1	Screw	BSZ26P050FMC
2	Screw	BSZ30P120FMC
3	Cord Assy	CDE4184
4	Fuse(7A)	CEK1023
5	Cap	CNS1472
6	Holder	CNC4962
7	Housing	CNV3636
8	Spring	CBH1566
9	Spring	CBH1567
10	Connector	CKS2732
11	Antenna Jack	CKX1043
12	Holder	CNC4880
13	Case	CNB1755
14	Holder	CNC4946
15	Shield Plate	CNC5129
16	Tape	CNM3891
17	Panel	CNS2906
18	Spring	CBH1477
19	Connector(CN901)	CKS2733
20	Case(KEH-P7005/ES)	CNS2269
21	Case Assy (KEH-P770/UC,KEH-P7000/UC)	CXA6425
22	Screw	BMZ20P040FMC
23	Button	CAC3841
24	Screw	CBA1271
25	Battery	CEX1022
✱ 26	Pin A	CNC5086
✱ 27	Pin B	CNC5087
28	Cushion	CNM3074
29	Cushion	CNM3860
30	P.C.Board	CNP3576
31	Case	CNS2905
32	Spacer	CNV3723
33	Cover	CNV3724
34	LED	HAA5066X
35	Connector	CNV3633
36	Nut	NA20FMC
37	Lens	CNV3630
38	Remote Control Assy	CXA5856
39	Battery Cover	CNS2850

Mark No.	Description	Part No
40	Heat Sink	CNR1308
41	Cap	CNS1472
42	Resistor	RS1/2P102JL
43	Cassette Mechanism Module (KEH-P770/UC)	EXK1935
◉	Cassette Mechanism Module (KEH-P7000/UC)	EXK1930
◉	Cassette Mechanism Module (KEH-P7005/ES)	EXK1910
44	Panel Unit	CXA6086
45	Door	CAT1558
46	Spring	CBH1371
47	LCD	CAW1249
48	Spring	CBH-865
49	Screw	CBA1284
50	Cushion	CNM3476
51	Holder	CNC4970
52	P.C.Board	CNP3697
53	Arm	CNV3637
54	Arm	CNV3654
55	Arm	CNV3655
56	Holder Unit	CXA5779
57	Handle	CNC4947
58	Cushion	CNM3949
59	Bush	CNV1009
60	Screw	BSZ30P050FMC
61	Screw	BSZ30P055FUC
62	Screw	CBA1215
63	Holder	CNC4963
64	Insulator	CNM3737
65	Tuner Amp Unit (KEH-P770/UC)	CWM3583
	Tuner Amp Unit (KEH-P7000/UC)	CWM3584
	Tuner Amp Unit (KEH-P7005/ES)	CWM3586
66	Chassis Unit	CXA5788
67	Holder	CNC4956
68	IC(IC551)	PA3027A
69	Screw	BSZ30P100FMC
70	Detach Grille Assy (KEH-P770/UC)	CXA5653

Mark No.	Description	Part No
	Detach Grille Assy (KEH-P7000/UC)	CXA5654
	Detach Grille Assy (KEH-P7005/ES)	CXA5656
71	Screw	BPZ20P080FMC
72	Cord(KEH-P770/UC)	CDE4074
	Cord (KEH-P7000/UC,P7005/ES)	CDE3846
73	IC(IC704)	PA2023A
74	Screw	BSZ30P060FMC
75	Cord	CDE4194
76	Holder	CNC4959
77	Holder	CNC4882
78	Antenna Cable	CDH1187
79	Plug(CN641)	CKS1224
80	Connector(CN704)	CKS1730
81	Plug(CN631)	CKS1733
82	Connector(CN703)	CKS2239
83	Connector(CN702)	CKS2480
84	Holder	CNC2218
85	FM/AM Tuner Unit	CWE1312
86	Holder	CNC4958
87	Holder	CNC4961
88	Power Supply Filter Unit	CWM3618
89	Screw	BPZ20P120FZK
90	Button	CAC3675
91	Button	CAC3676
92	Button	CAC3692
93	Button	CAC3693
94	Button	CAC3694

Mark No.	Description	Part No
95	Button	CAC3695
96	Button	CAC3696
97	Button	CAC3697
98	Spring	CBH1623
99	Cushion	CNM3727
100	Cover	CNS2758
101	Lens	CNV3631
102	Lens	CNV3632
103	Key Board Unit	CWM3593
104	Grille Unit(KEH-P770/UC)	CXA5810
	Grille Unit(KEH-P7000/UC)	CXA5811
	Grille Unit(KEH-P7005/ES)	CXA5813
* 105	Panel	CNS2761
106	Plug(CN792)	CKM1057
107	Plug(CN791)	CKS1624
108	Button Unit	CXA6162
109	Holder	CNC4957
110	Insulator	CNM3634
111	Button Unit	CXA6163
112	Insulator	CNM3825

● LCD(CAW1249)

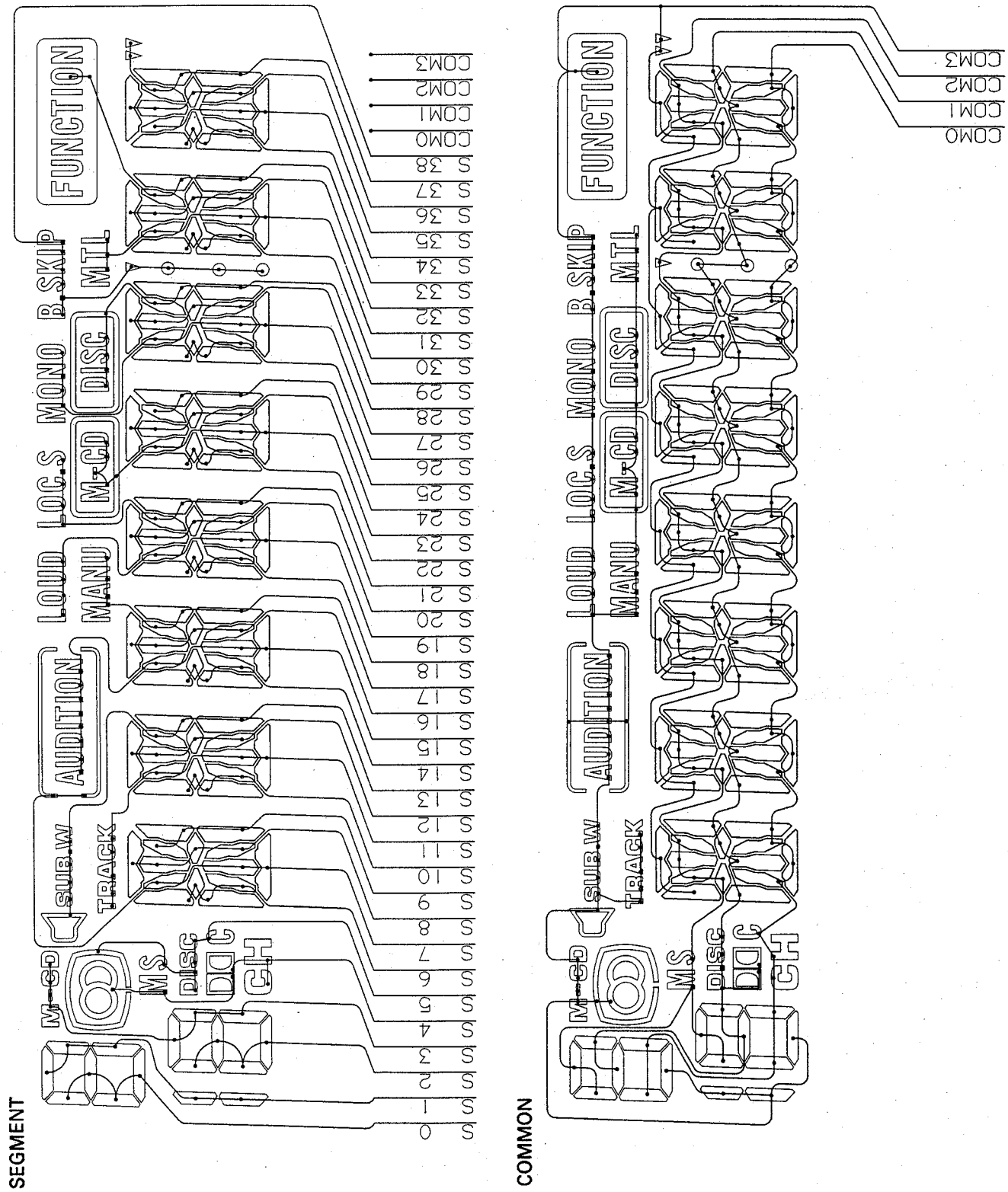
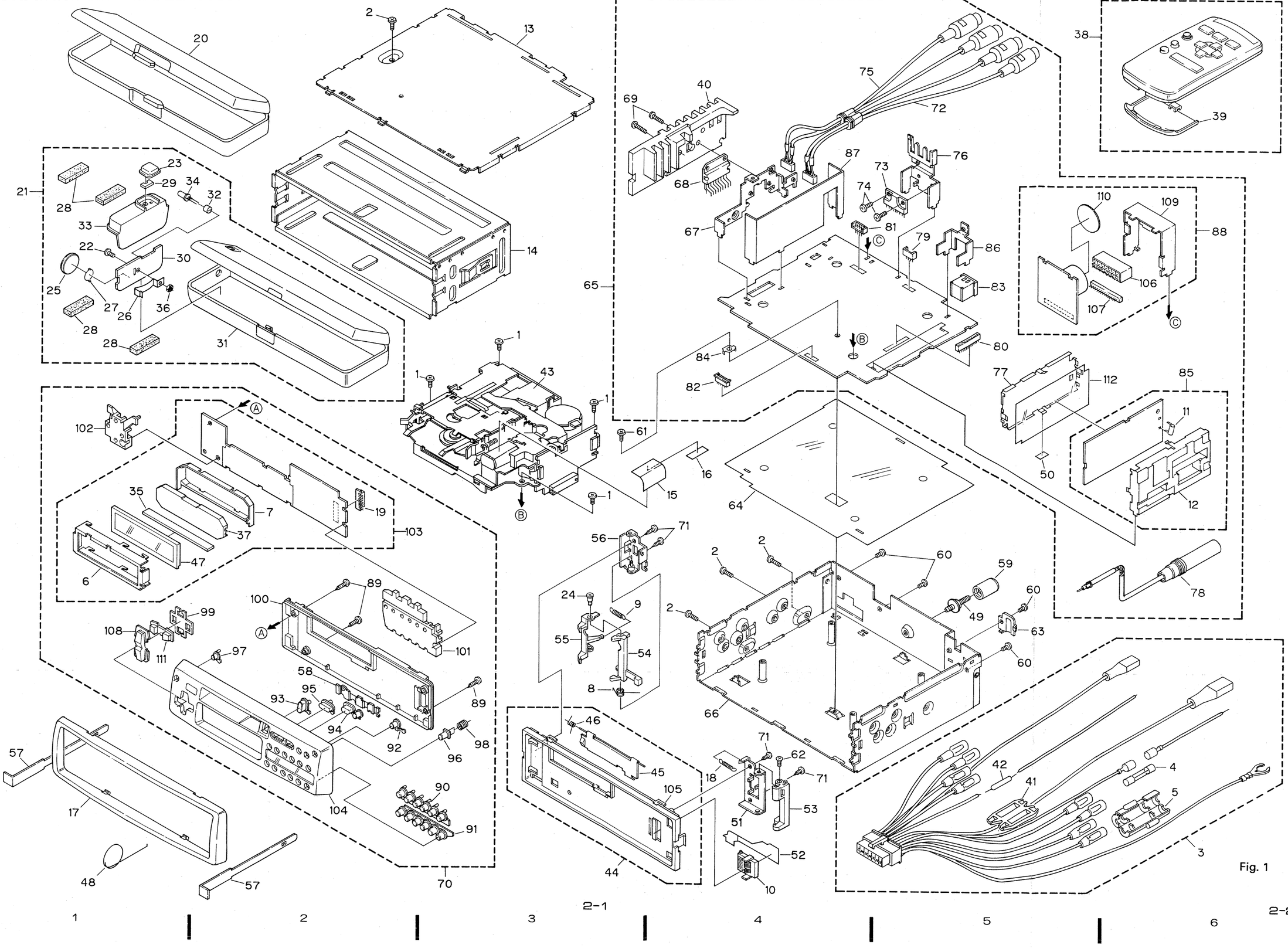
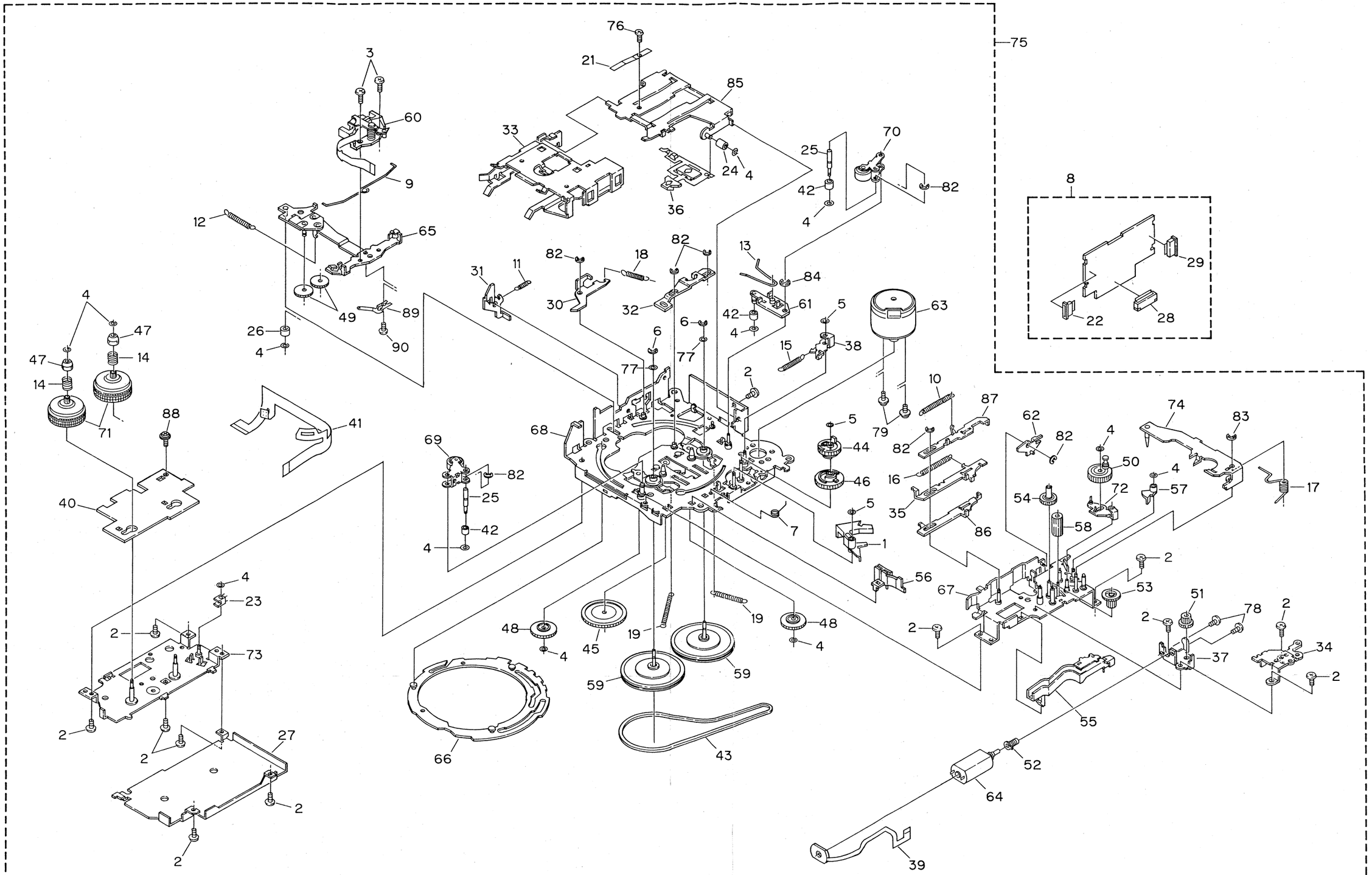


Fig.18

CHAPTER 2
1. CHASSIS EXPLODED VIEW



2. CASSETTE MECHANISM MODULE EXPLODED VIEW (KEH-P770/UC)



3. CASSETTE MECHANISM MODULE EXPLODED VIEW (KEH-P7000/UC, KEH-P7005/ES)

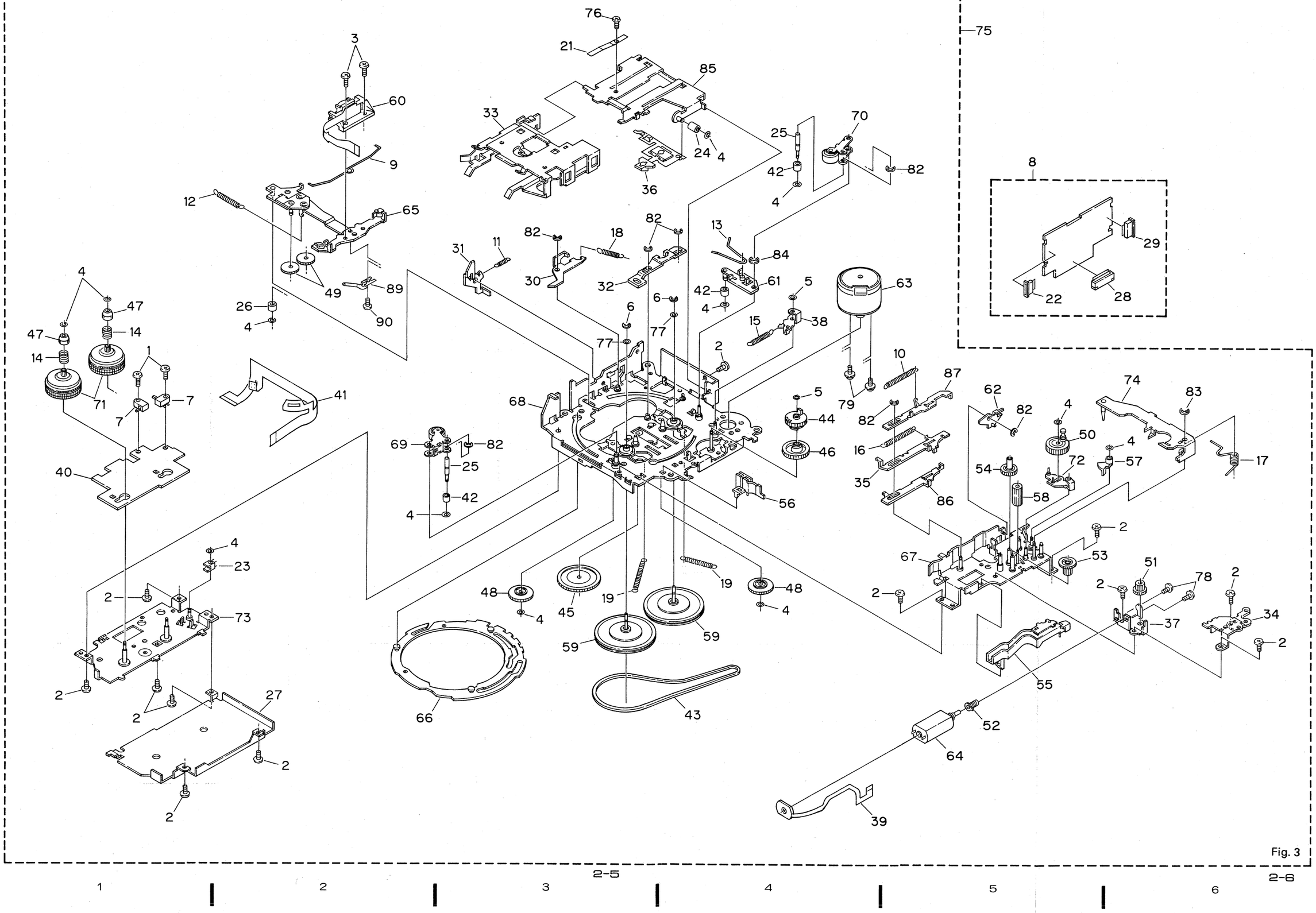
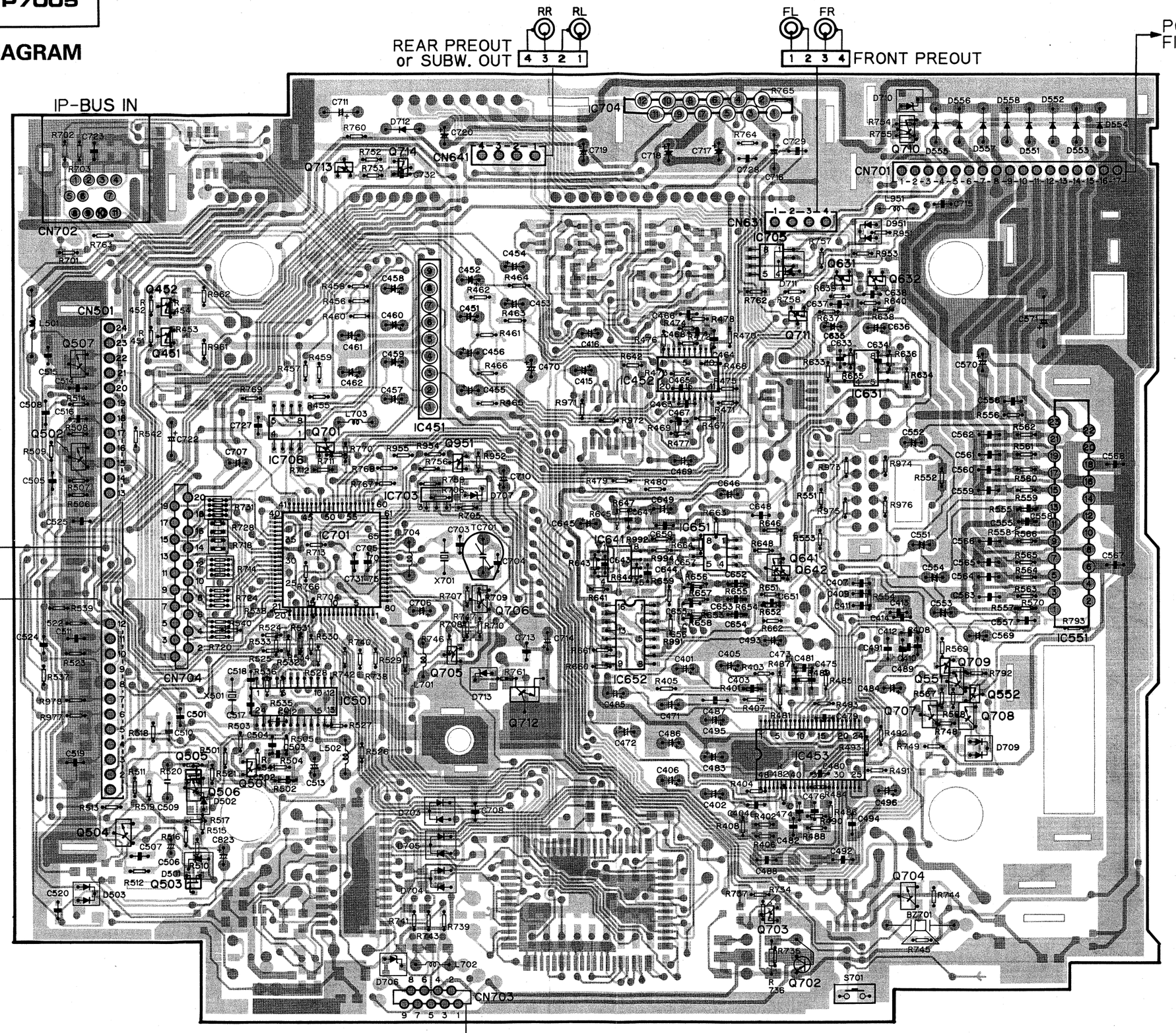


Fig. 3

4. CONNECTION DIAGRAM

●TUNER AMP UNIT



ADJ IC, Q

IC704
Q710

Q713 Q714

IC705

Q631 Q632
Q452
Q711 IC451
Q451

IC631
Q507
IC452

Q502
IC706 Q701

Q951
IC703

IC551

IC701

TC701 IC651
IC641

Q641
Q642
IC652

Q706

Q709

Q551 Q705
Q552 Q712
Q707 IC501
Q708
Q501
IC453
Q505 Q506

Q504

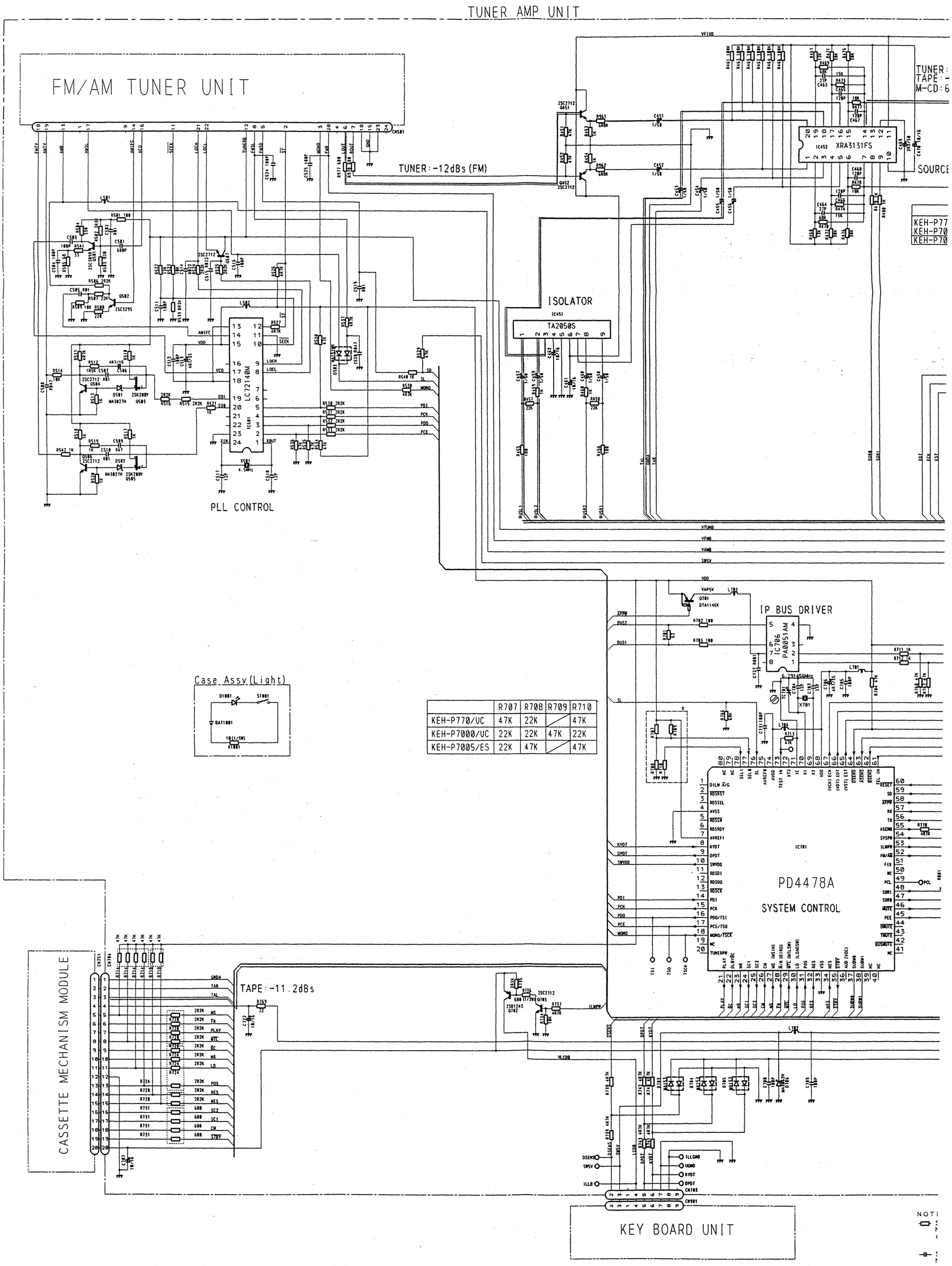
Q503
Q504
Q704

VR801 Q703

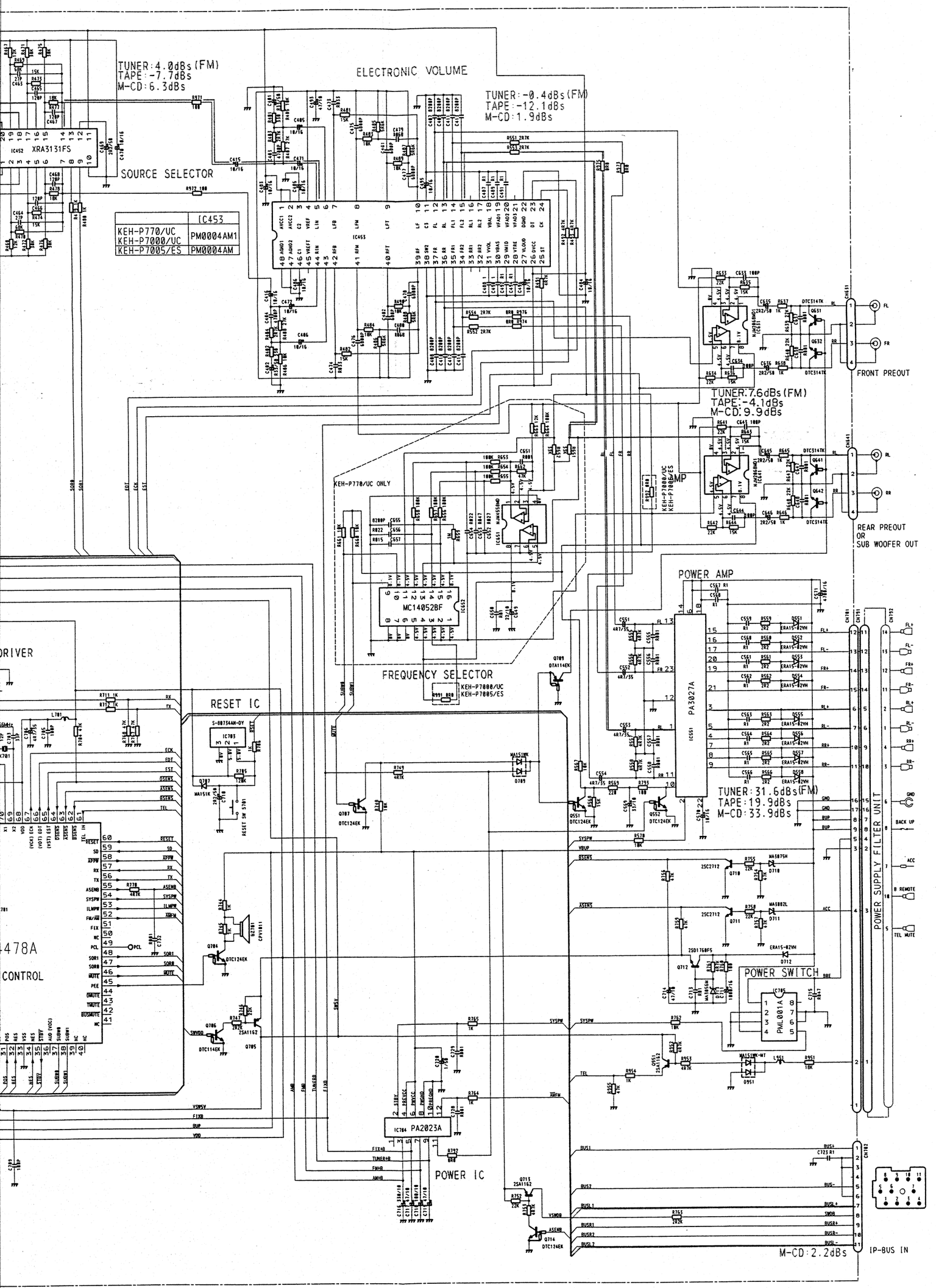
Q702

Fig. 4

5. SCHEMATIC CIRCUIT DIAGRAM



	R707	R708	R709	R710
KEH-P770/UC	47K	22K		47K
KEH-P7000/UC	22K	22K	47K	22K
KEH-P7005/ES	22K	47K		47K



NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

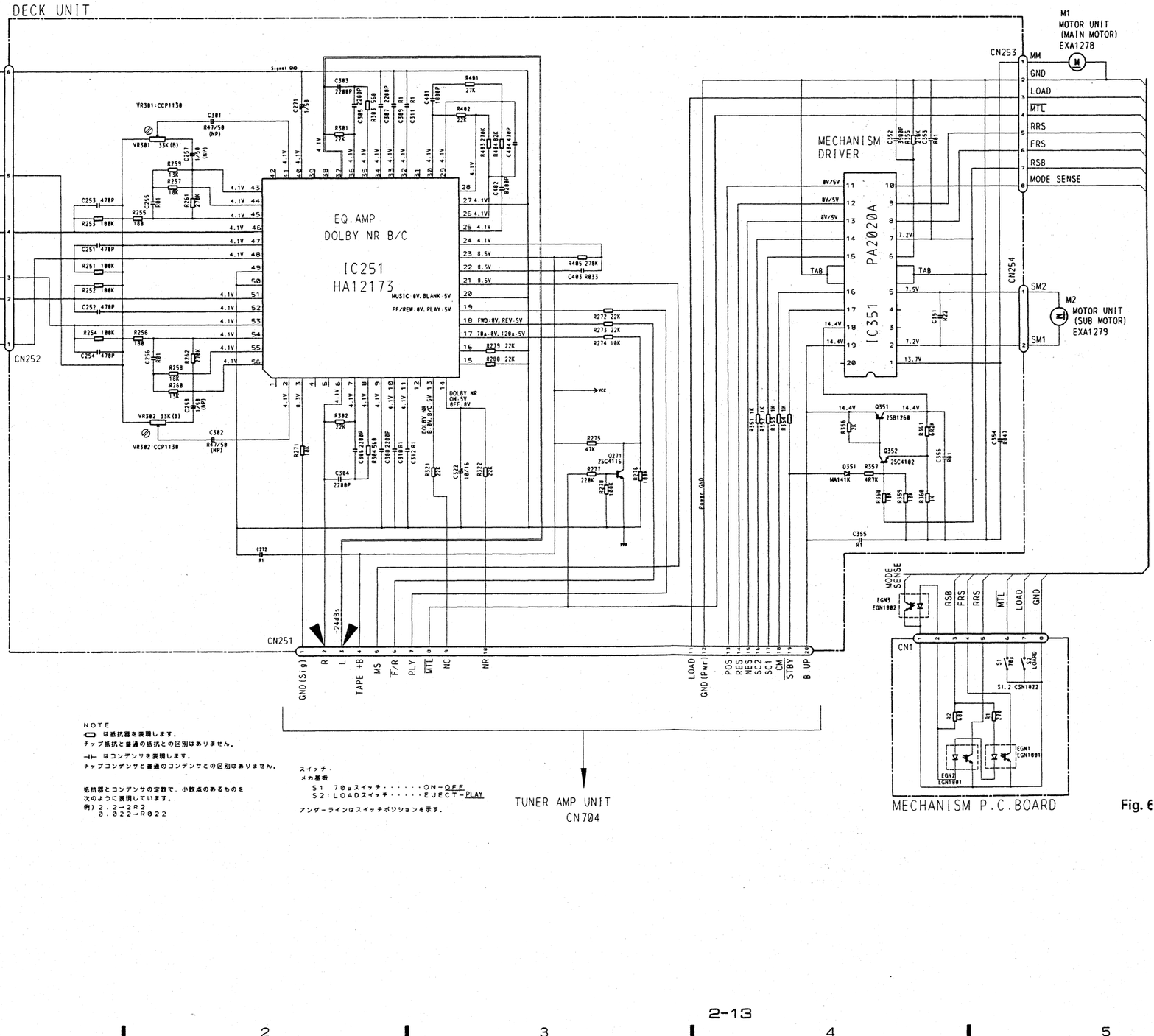
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 5

6. CIRCUIT DIAGRAM AND PATTERN

6.1 CASSETTE MECHANISM MODULE(KEH-P770/UC,KEH-P7000/UC)

●Circuit Diagram



NOTE
⇦ は抵抗器を表現します。
チップ抵抗と普通の抵抗との区別はありません。
⊣⊢ はコンデンサを表現します。
チップコンデンサと普通のコンデンサとの区別はありません。

抵抗器とコンデンサの定数で、小数点のあるものを
次のように表現しています。
例）2.2→2R2
0.022→R022

スイッチ
メカ基板
S1 70μスイッチ……ON-OFF
S2 LOADスイッチ……EJECT-PLAY

アンダーラインはスイッチポジションを示す。

Fig. 6

5 6 7 8 9

A

B

C

D

R UNIT
N MOTOR)
278

OTOR UNIT
SUB MOTOR)
XA1279

●Connection Diagram

DECK UNIT

IC, Q	Q352	IC351 Q351	Q271	IC251
ADJ				VR301 VR302

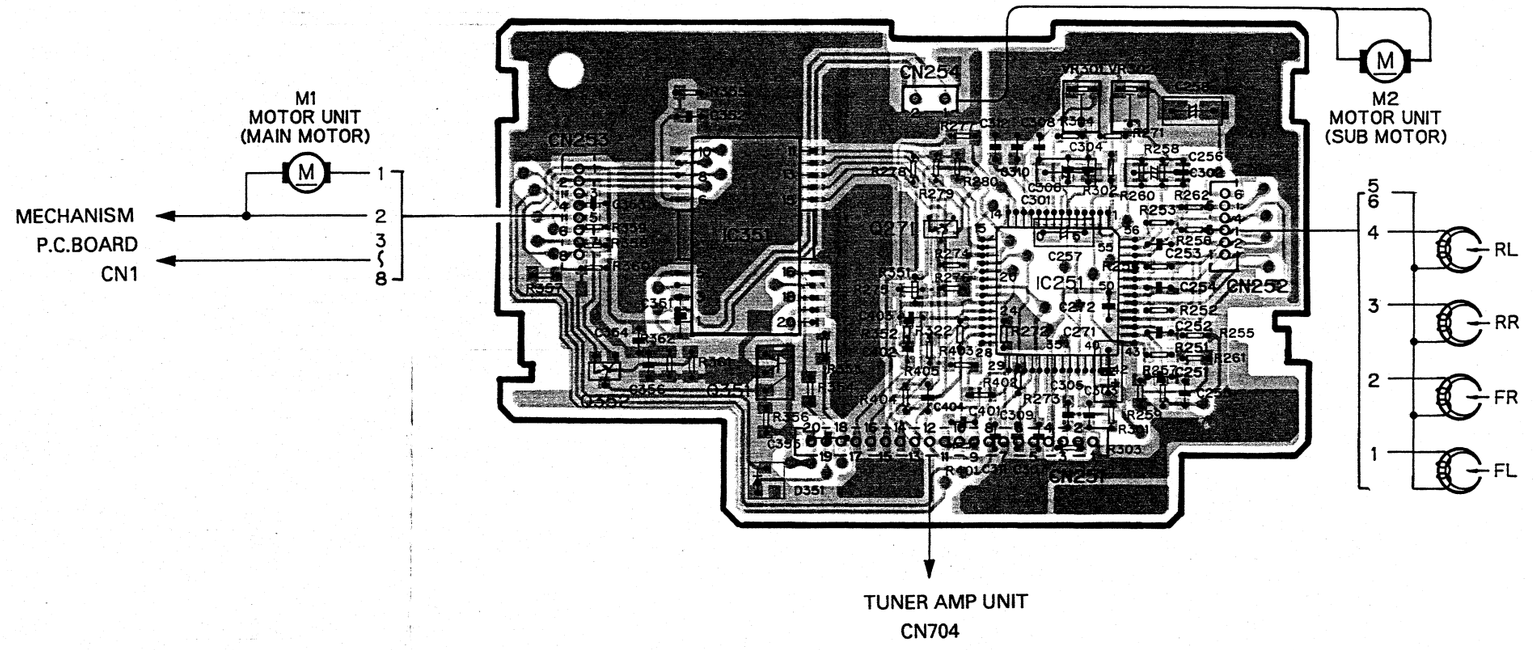


Fig. 6

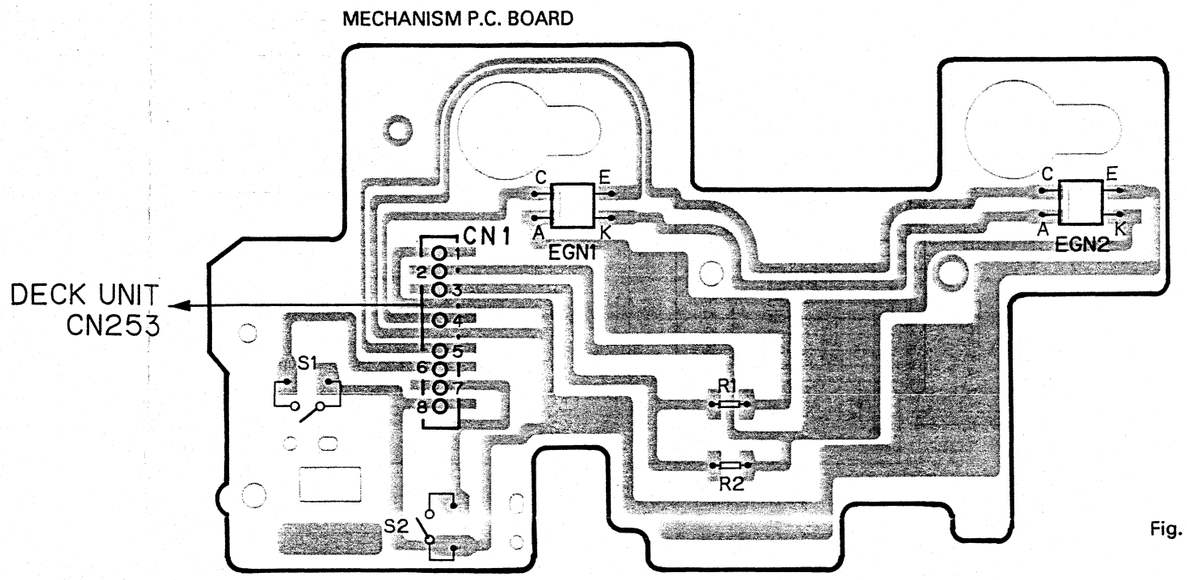
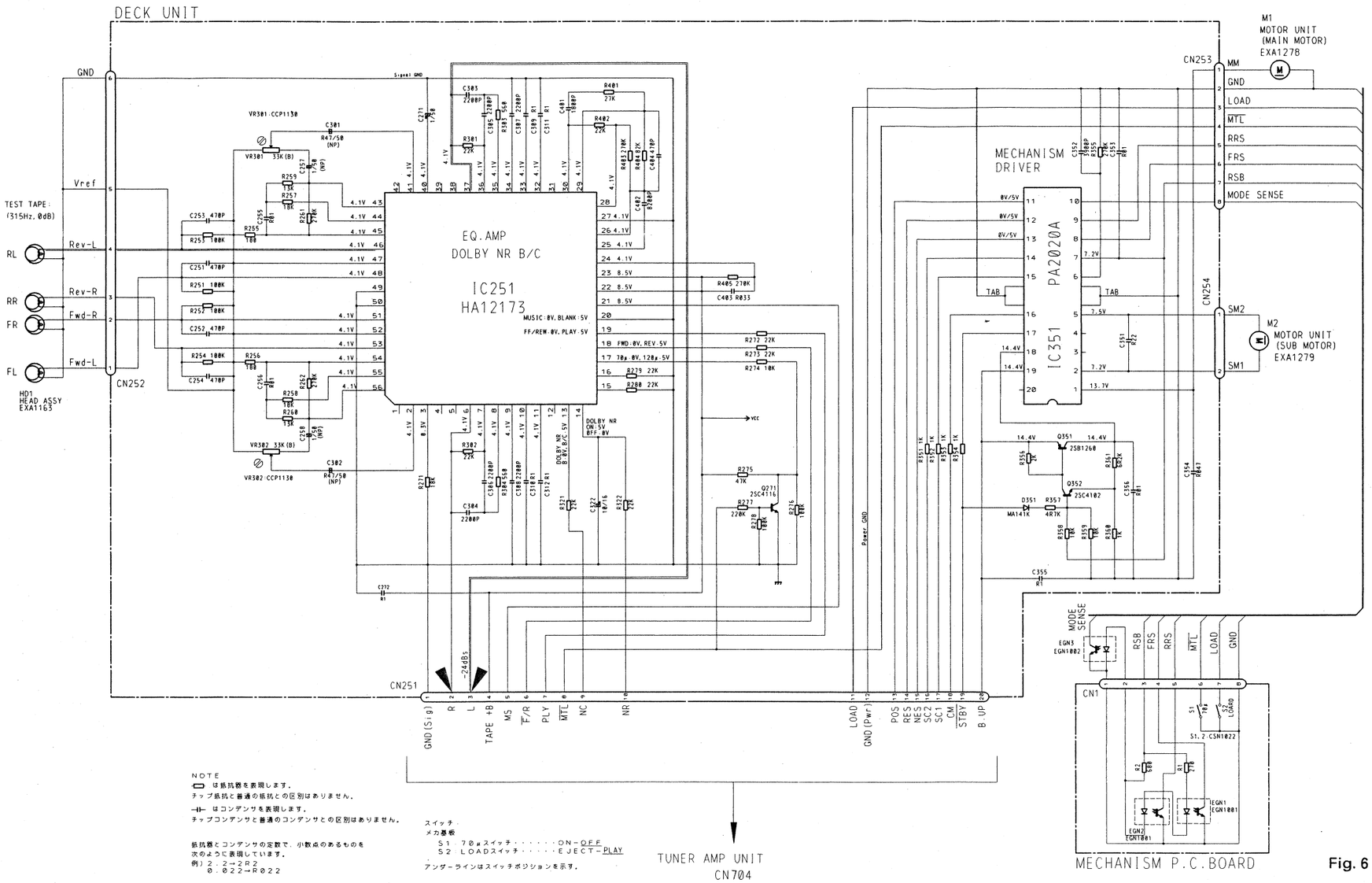


Fig. 7

6. CIRCUIT DIAGRAM AND PATTERN

6.1 CASSETTE MECHANISM MODULE(KEH-P770/UC,KEH-P7000/UC)

●Circuit Diagram



NOTE

抵抗器を表現します。
チップ抵抗と普通の抵抗との区別はありません。

コンデンサを表現します。
チップコンデンサと普通のコンデンサとの区別はありません。

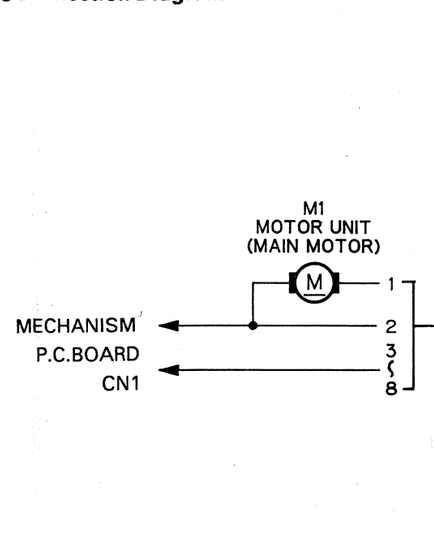
抵抗器とコンデンサの定数で、小数点のあるものを次のように表現しています。
例）2．2→2R2
0．022→R022

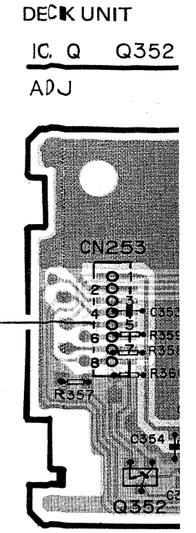
スイッチ
メカ基板
S1 70μスイッチ……ON-OFF
S2 LOADスイッチ……EJECT-PLAY

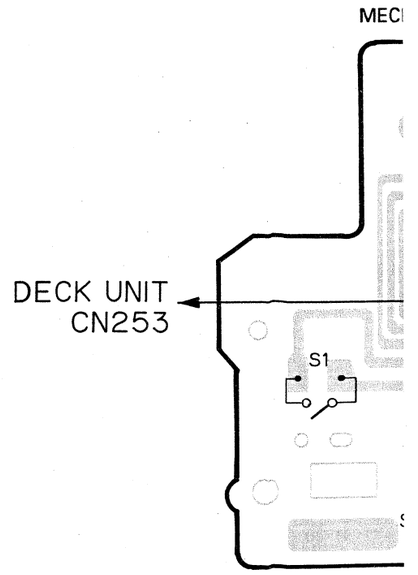
アンダーラインはスイッチポジションを示す。

Fig. 6

●Connection Diagram







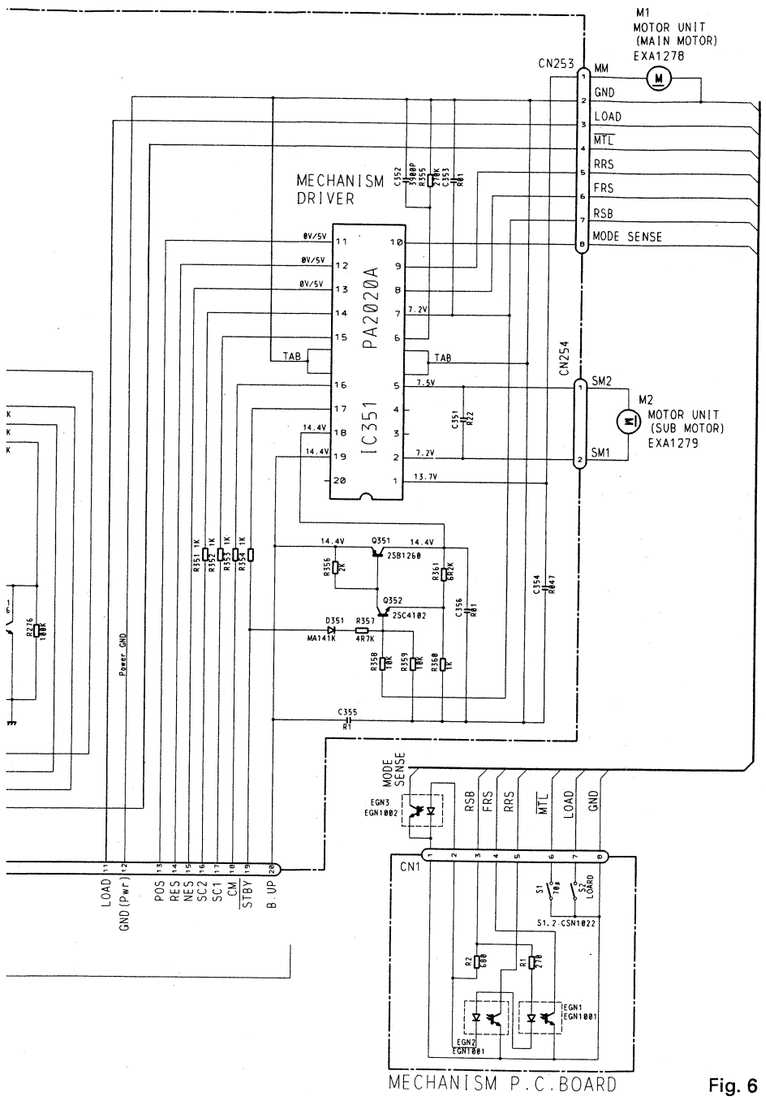
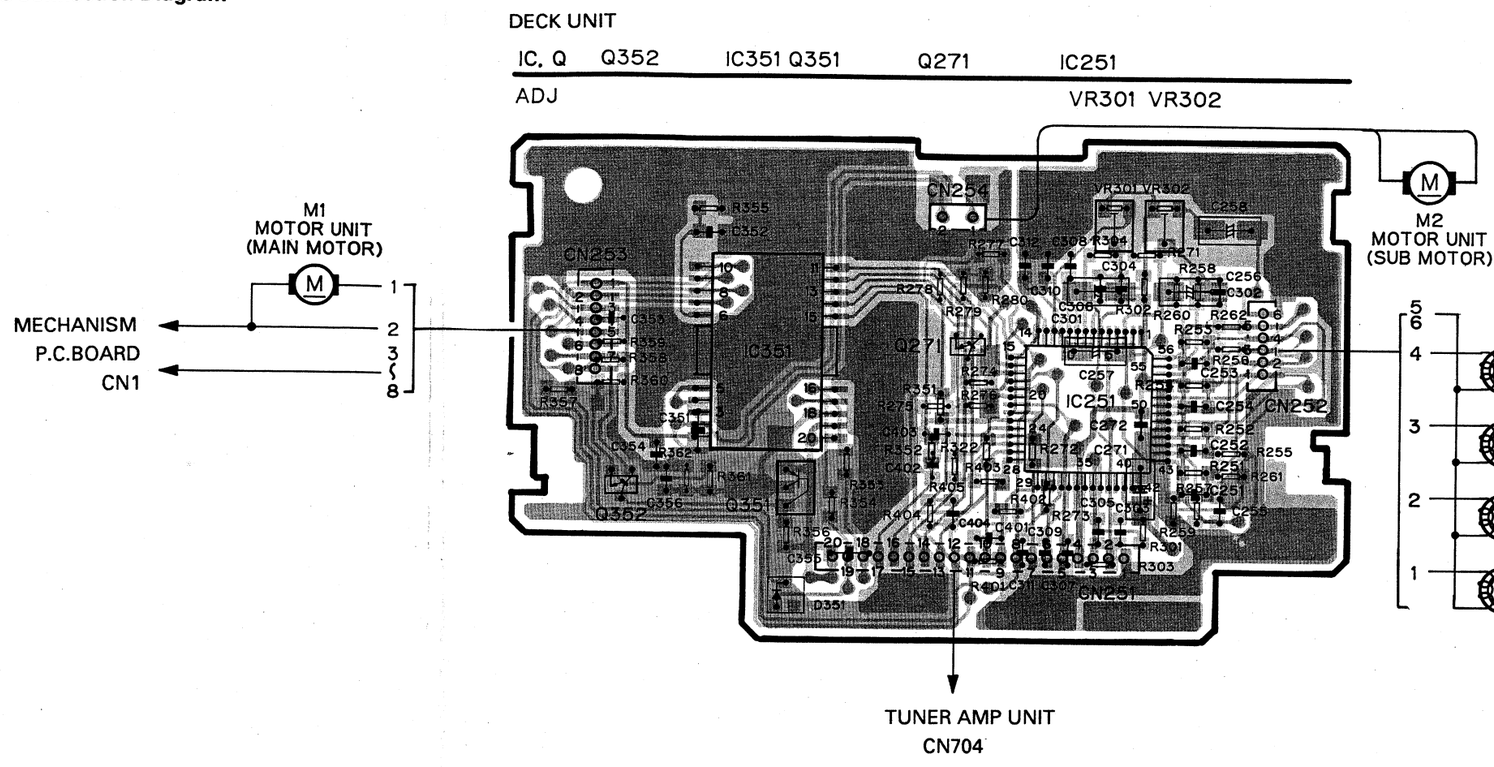


Fig. 6

●Connection Diagram



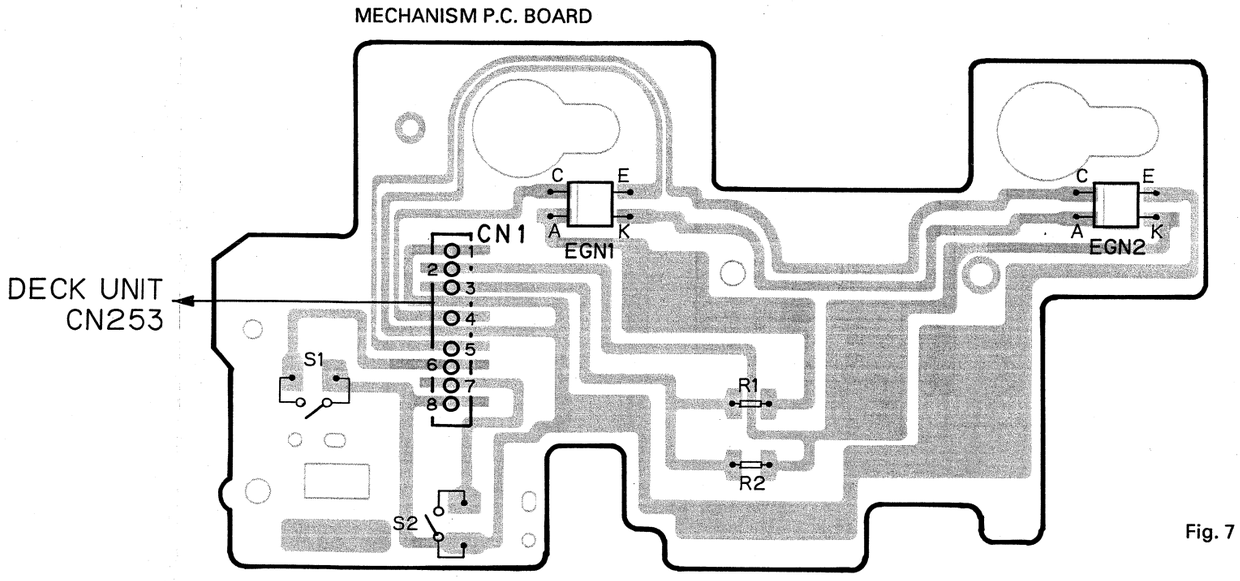
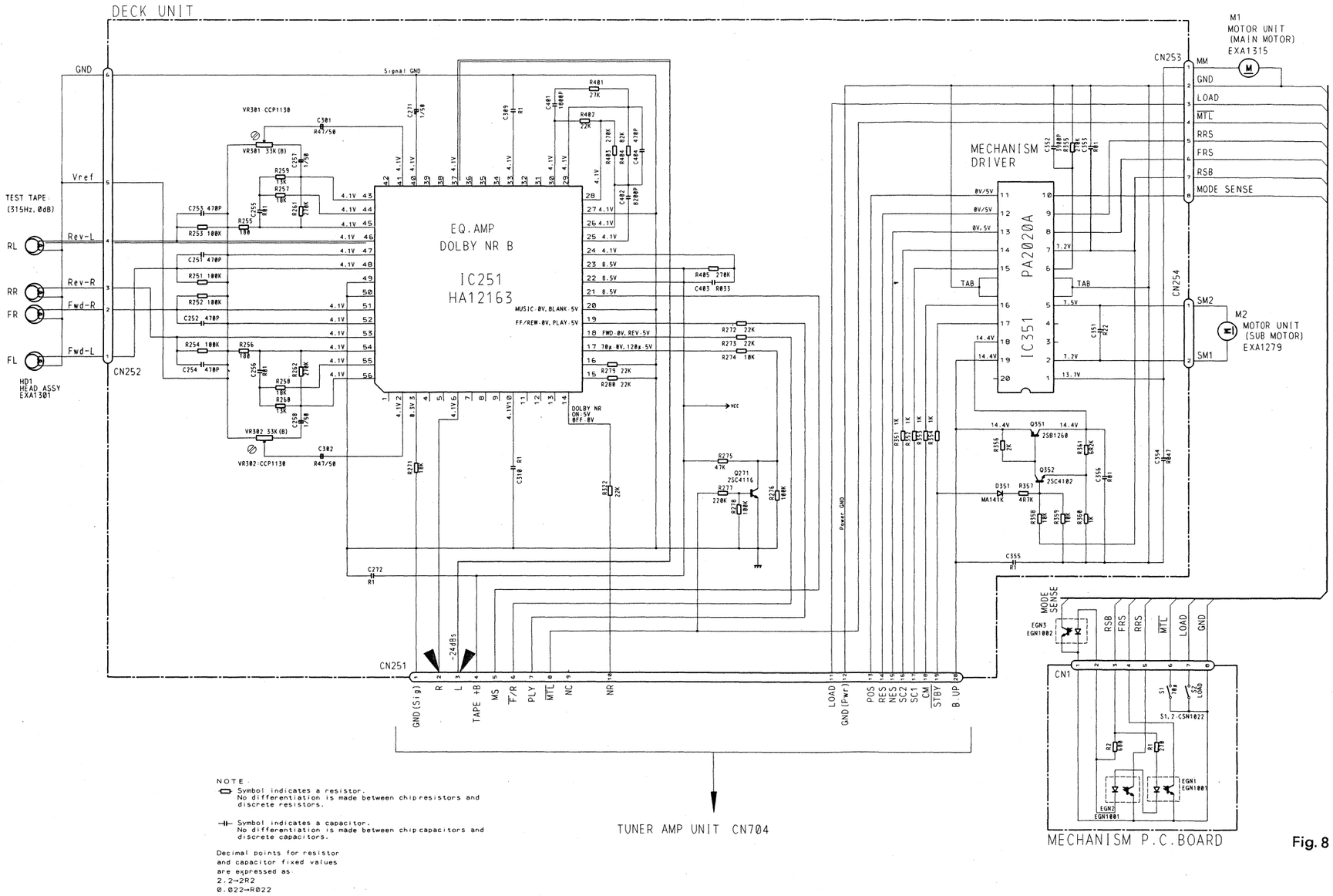


Fig. 7

6.2 CASSETTE MECHANISM MODULE(KEH-P7005/ES)

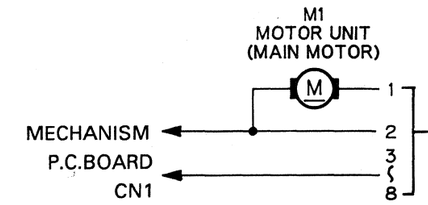
●Circuit Diagram



NOTE
- Symbol indicates a resistor.
  No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
  No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

●Connection Diagram



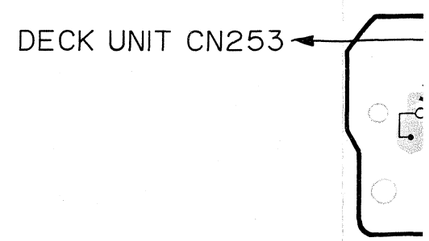


Fig. 8

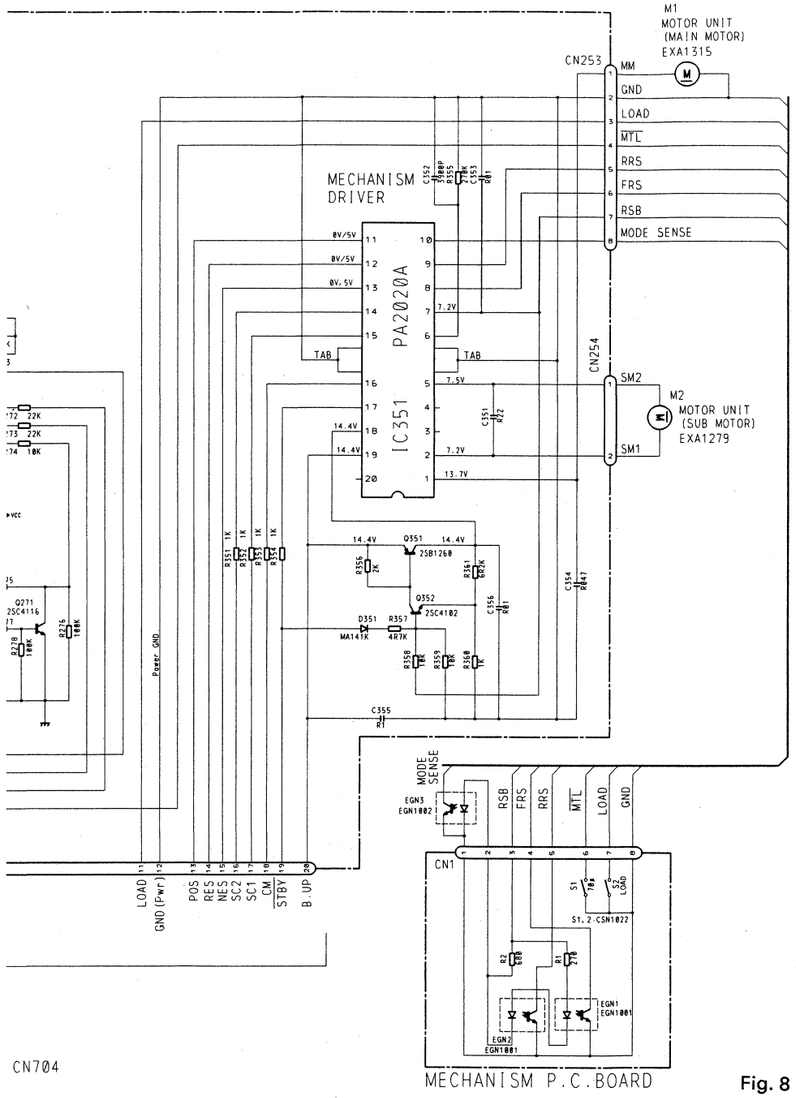
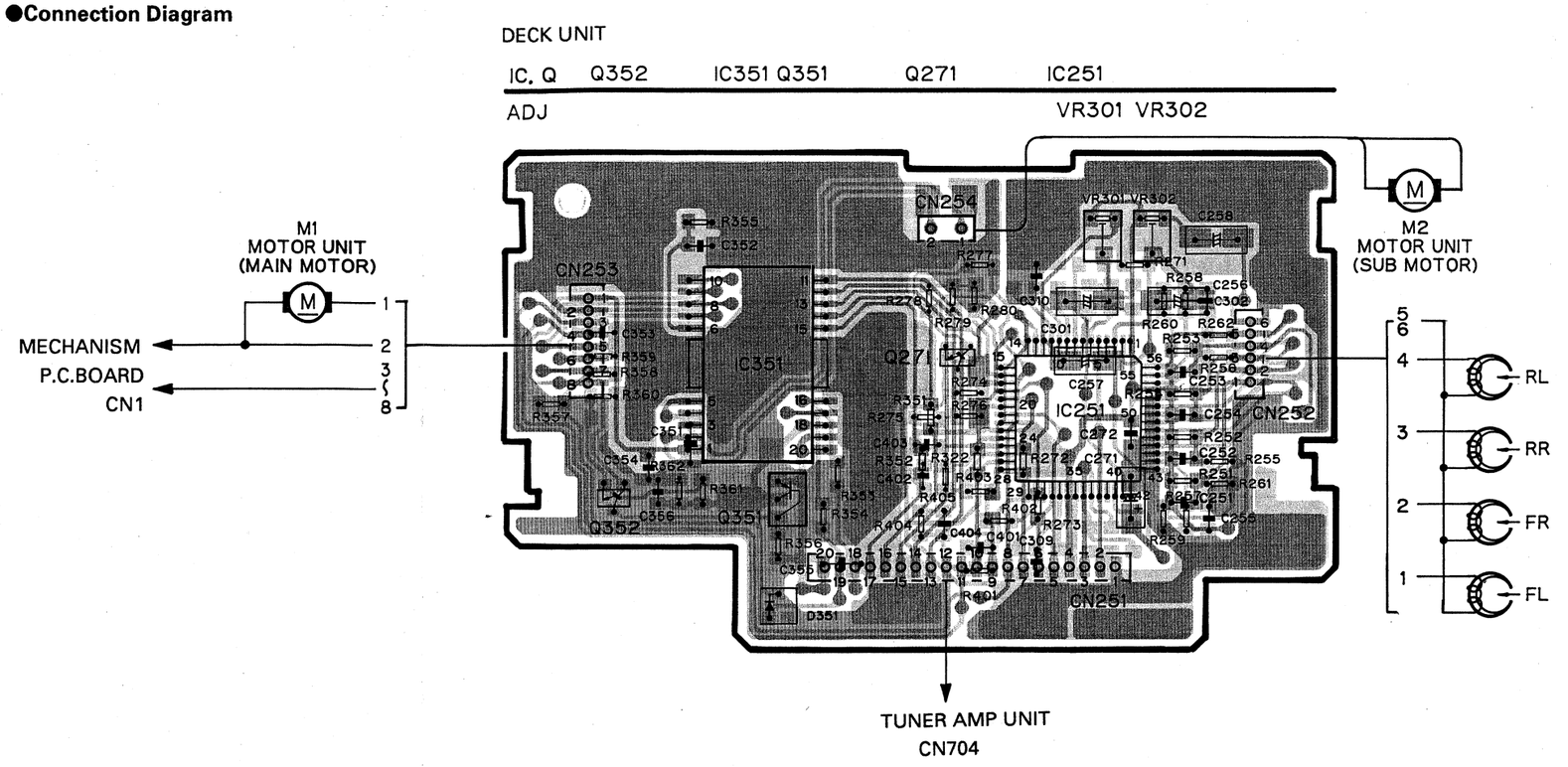


Fig. 8

●Connection Diagram



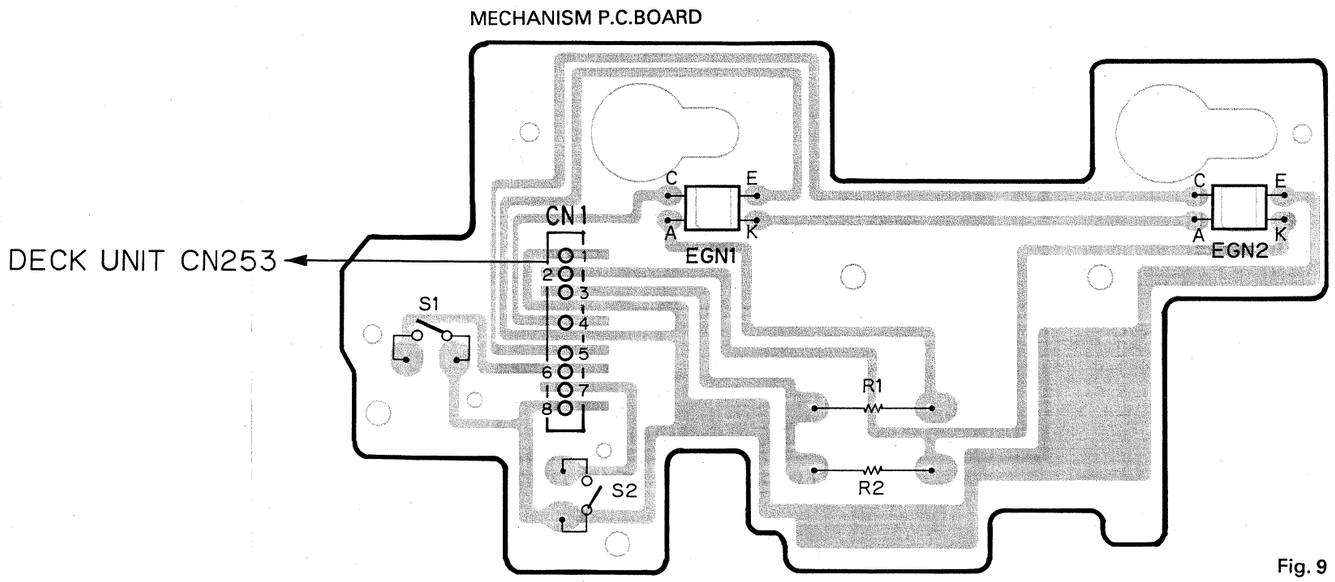


Fig. 9

6.3 POWER SUPPLY FILTER UNIT

●Circuit Diagram

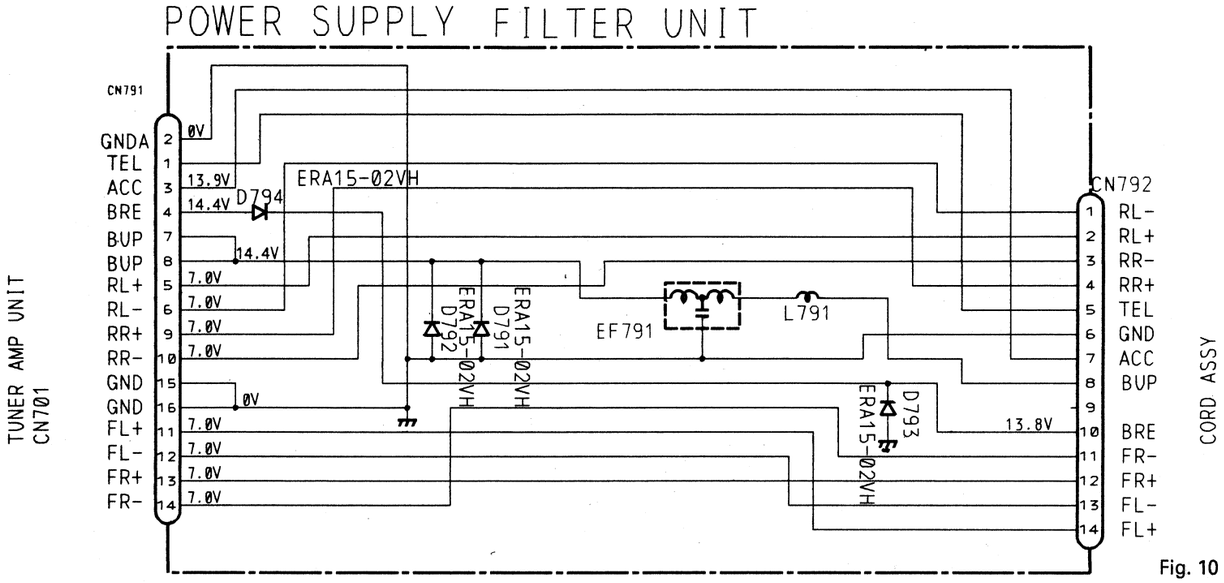


Fig. 10

●Connection Diagram

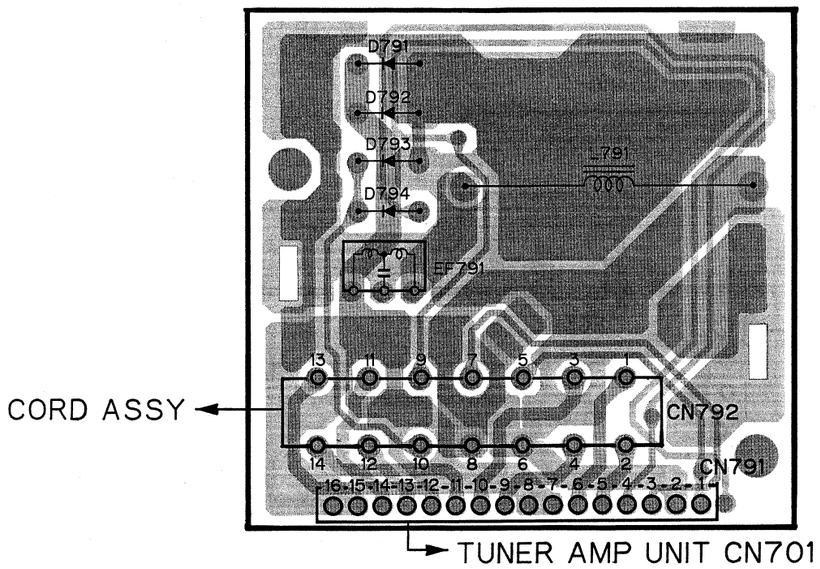


Fig. 11

6.4 FM/AM TUNER UNIT

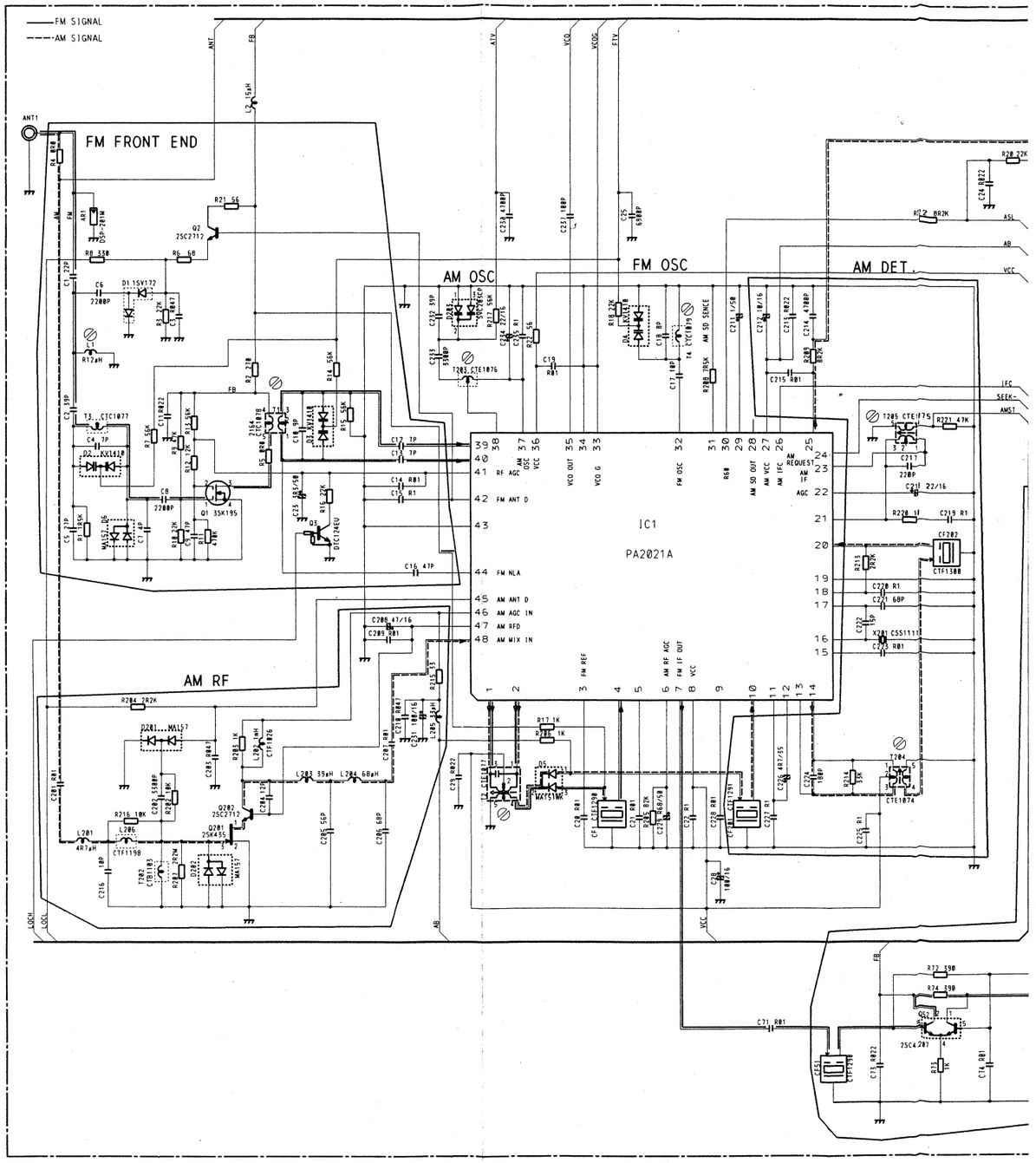
●Circuit Diagram

NOTE:

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022



6.4 FM/AM TUNER UNIT

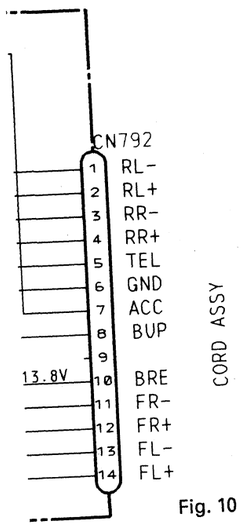
●Circuit Diagram

NOTE:

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022



CORD ASSY

Fig. 10

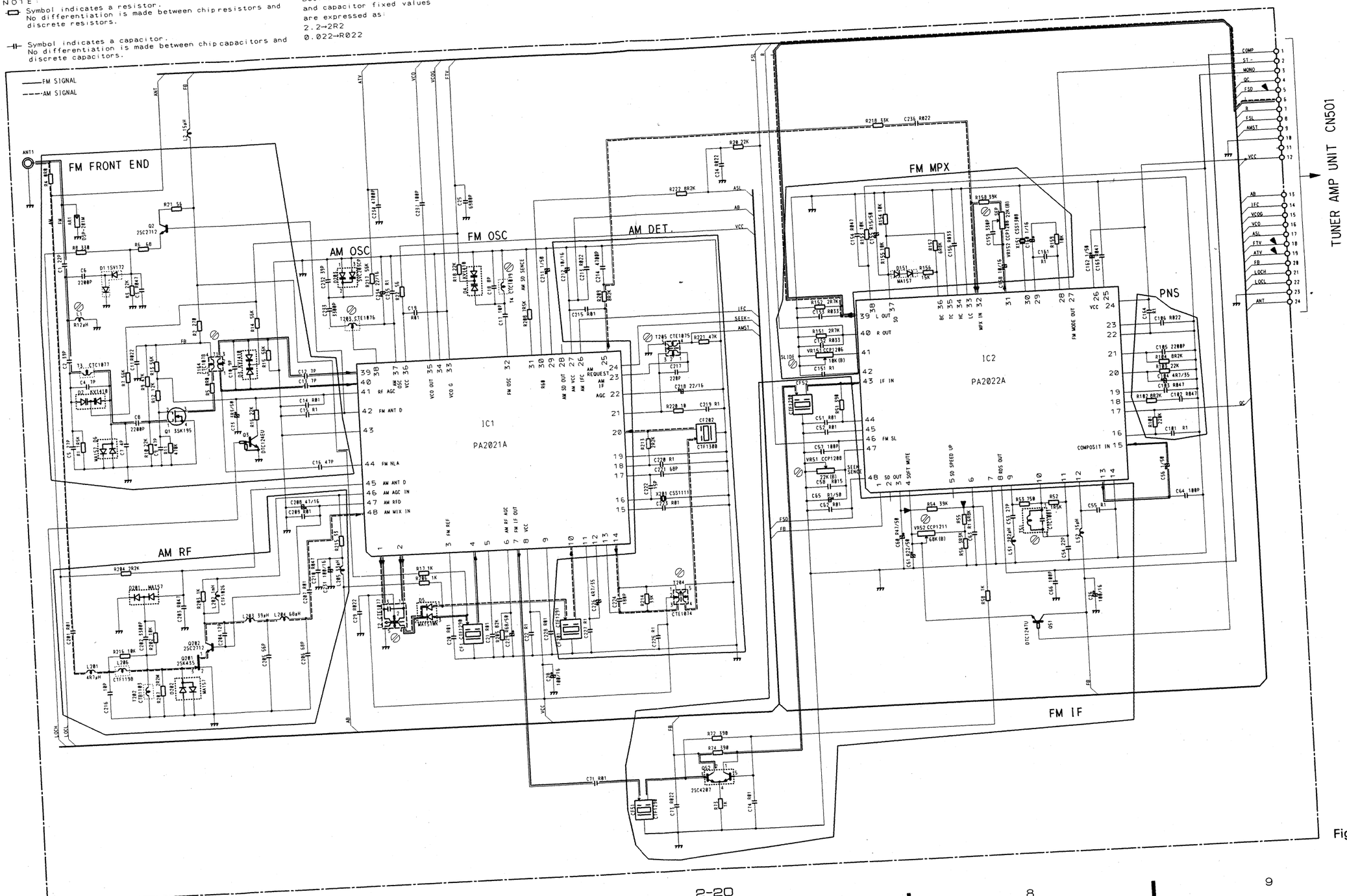
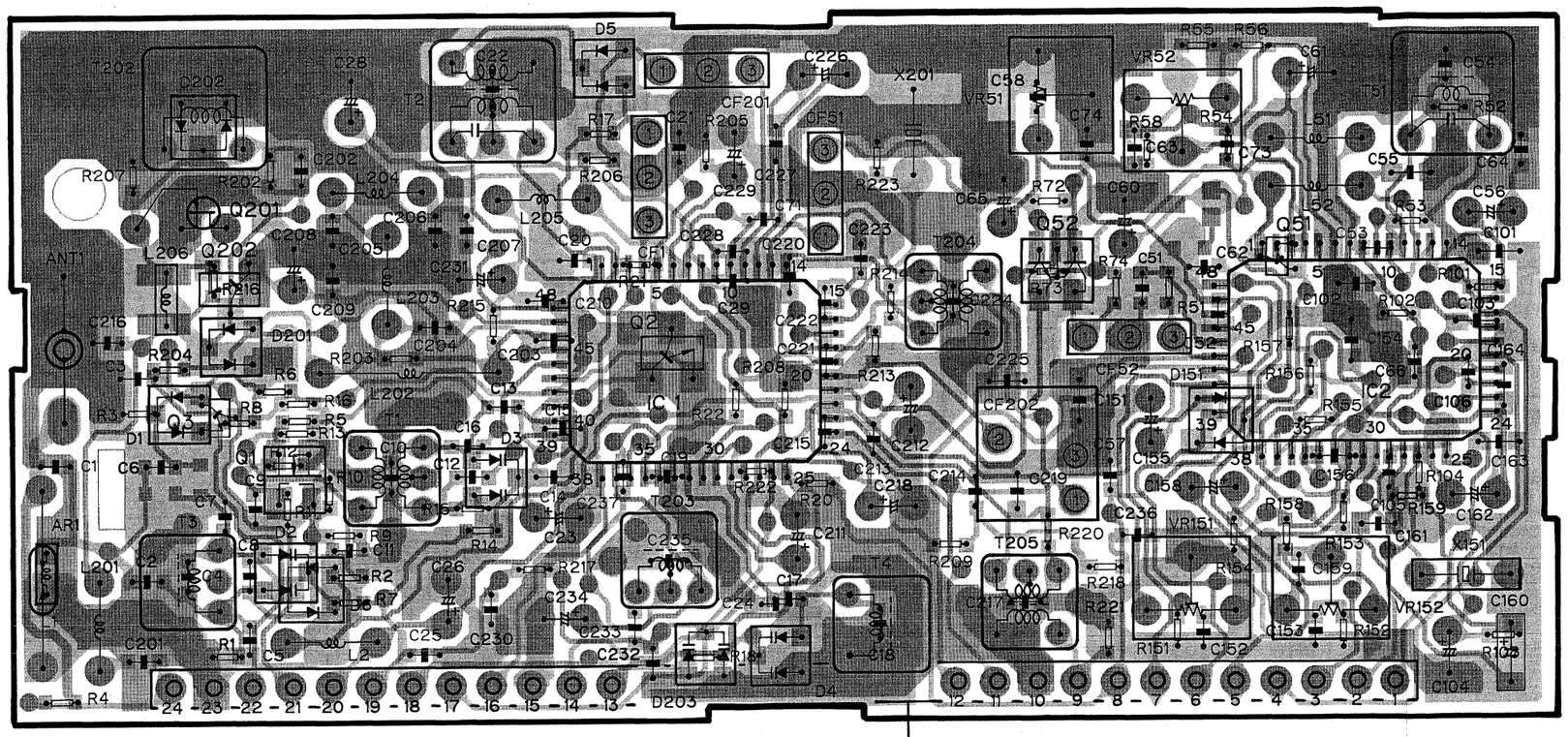


Fig. 12

●Connection Diagram

IC, Q	Q201	Q3	Q202	Q1			Q2	IC1		Q52			Q51	IC2	
ADJ	T3				T1	T2	T203		T4	T204	T205	VR51	VR52	VR151	VR152	T51


T202
C202
C28
T2
D5
C22
C226
X201
C58
VR51
C74
R55
R56
VR52
C61
T51
C54
R52
R58
R54
C63
C73
L51
CF201
CF51
R17
C21
R205
C227
C229
R206
R223
C71
C55
C64
C56
R53
C65
R72
C60
Q52
Q51
C53
C101
R74
C51
C62
L52
R101
R102
C102
R51
C103
R157
C154
C66
C2
C106
R156
R155
C104
C163
R104
C105
R159
C161
C162
X151
VR152
C160
R103
R158
C156
C159
R153
VR151
C236
C158
C155
C57
CF52
D151
CF202
C151
C225
R213
R208
C222
C221
C220
C228
C223
T204
R214
R224
C224
C29
CF1
C20
C231
R215
C210
Q2
IC1
R22
C215
C212
C213
C218
C214
C219
T205
R220
R209
R218
R221
C217
C211
C237
T203
C235
C234
C233
C232
T4
D4
C17
C18
C23
C26
C25
C230
R217
R14
R2
R7
R1
C5
L2
C201
L201
C2
C4
C8
C11
R9
D2
C7
C14
C16
C13
C15
C12
C10
R10
R11
R12
L3
L4
C9
Q1
C6
C1
AR1
R4
D1
R3
Q3
R8
R16
R5
R13
L202
R6
D3
R204
C3
D201
R203
C204
C205
C203
C209
L203
C207
C206
C208
L204
L205
L206
Q202
Q201
R202
R207
ANT1
C216
R216
C24
C27
R21
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R56
R57
R58
R59
R60
R61
R62

6.5 KEY BOARD UNIT ●Circuit Diagram

KEY BOARD UNIT

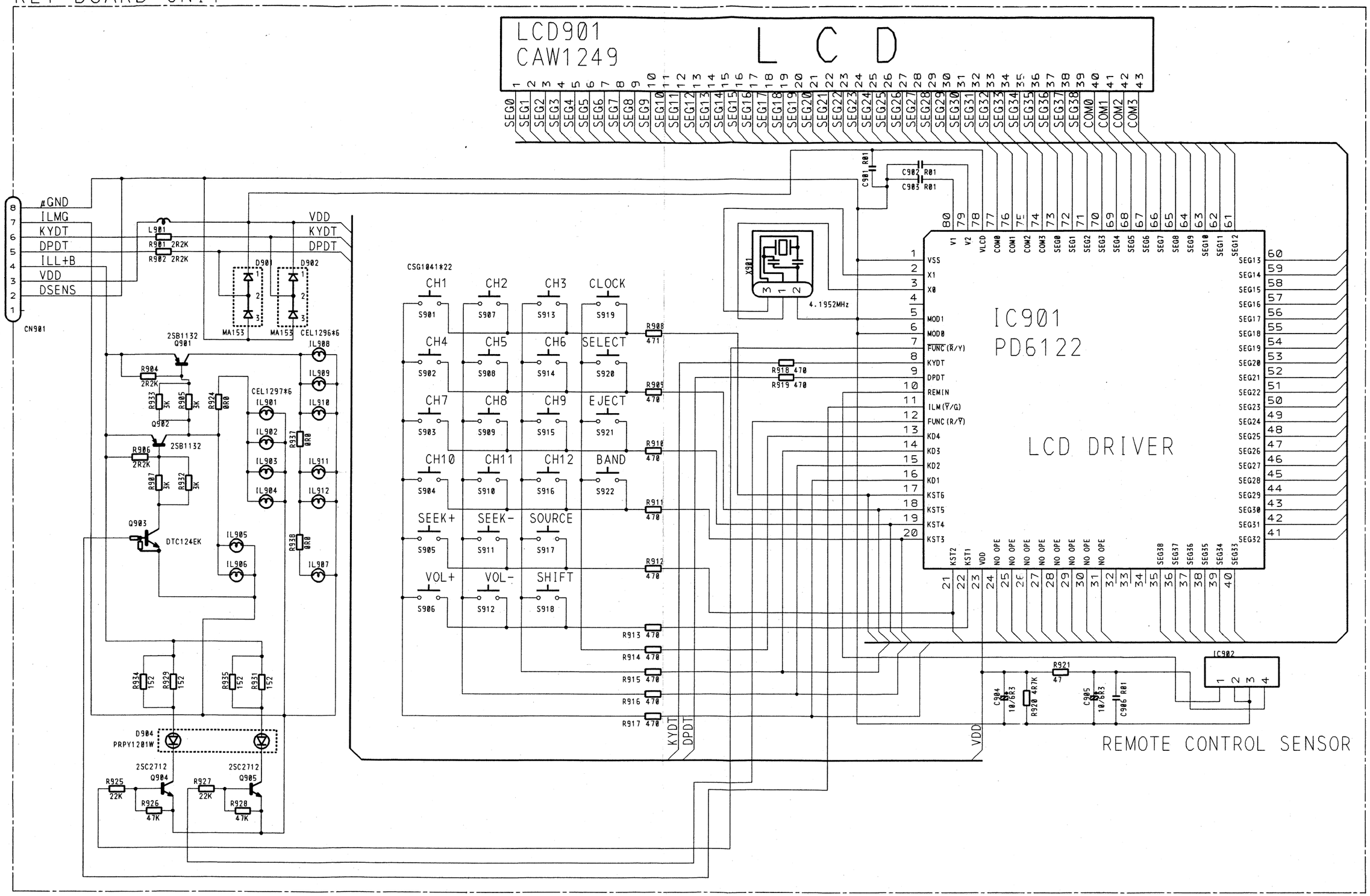


Fig. 14

●Connection Diagram

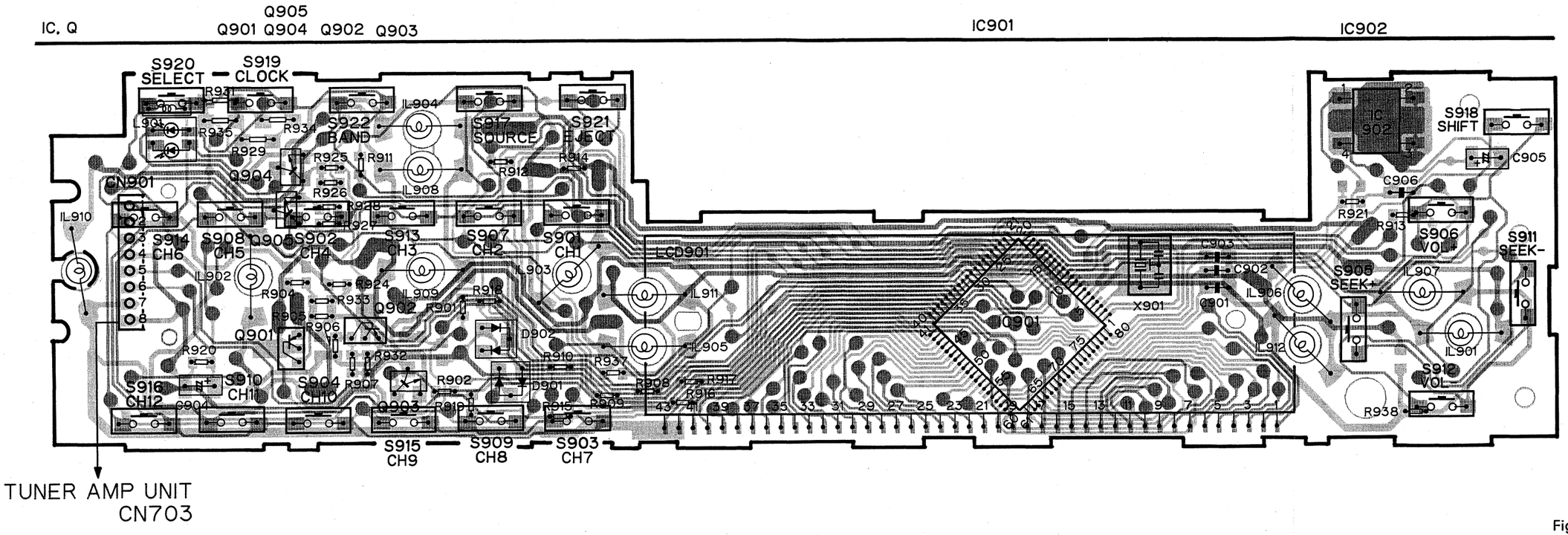


Fig. 15

7. BLOCK DIAGRAM

●KEH-P770/UC

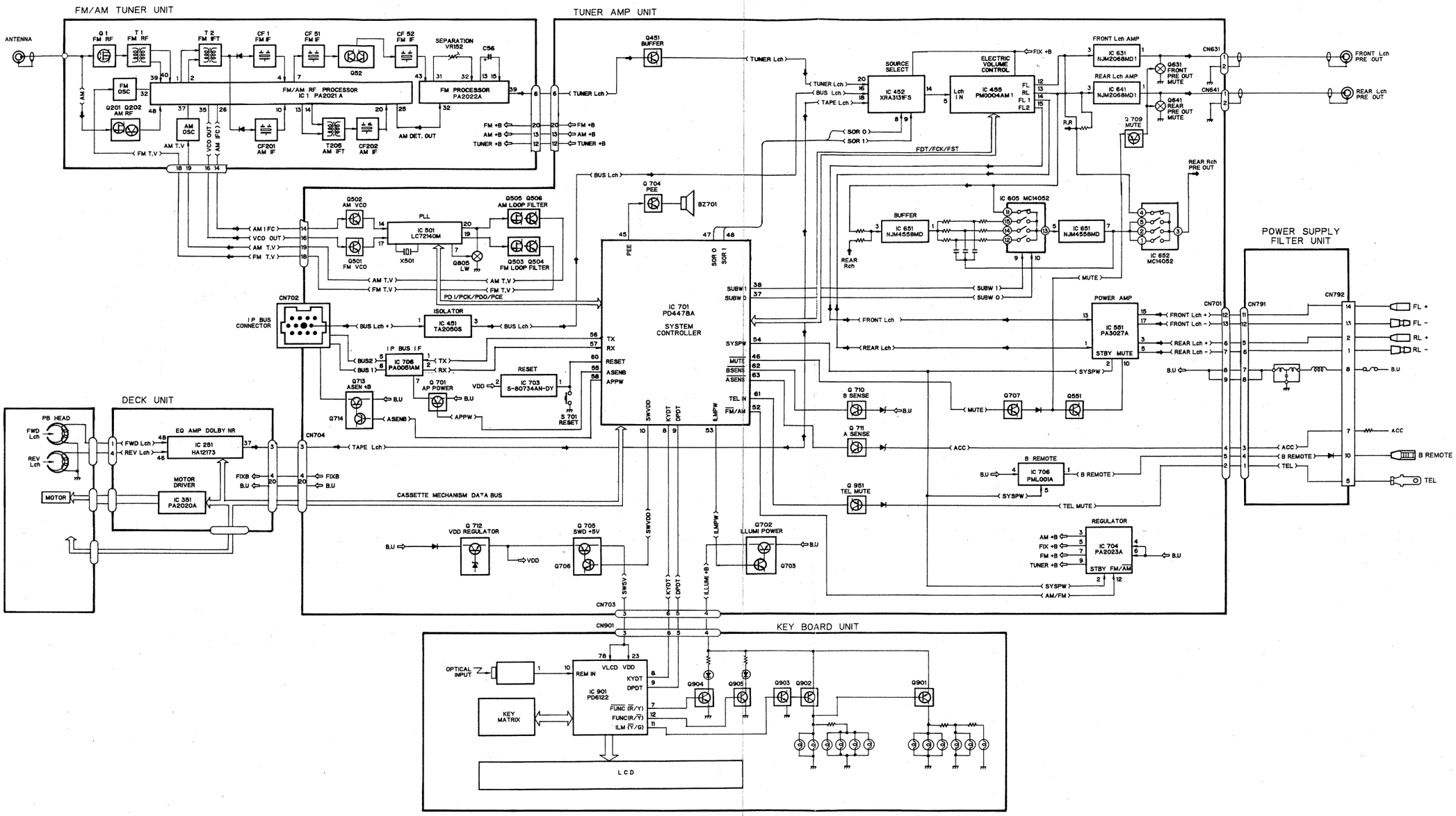


Fig. 16